

OE ENERGY MARKET SNAPSHOT

Western States Version – February 2008 Data

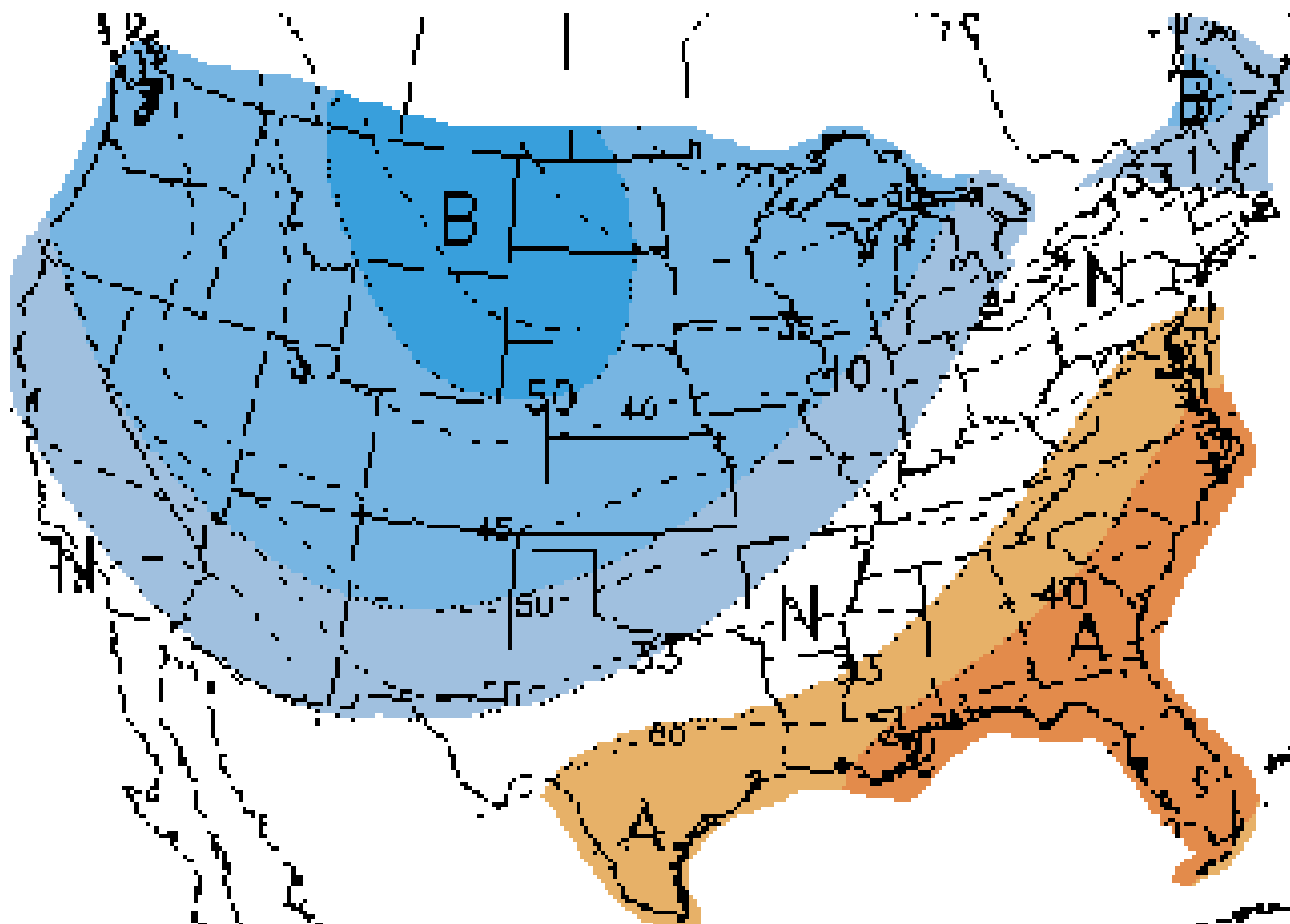
- **Market Fundamentals**
- **Prices and Market Analysis**

Office of Enforcement
Federal Energy Regulatory Commission
March 2008

A decorative graphic consisting of several red lines. A vertical line on the left side is composed of three parallel lines. A horizontal line on the right side is composed of three parallel lines. These lines intersect to form a cross-like shape that frames the title text.

Market Fundamentals

NOAA's 8 to 14 Day Temperature Forecast Made March 6, Valid for March 14-20, 2008



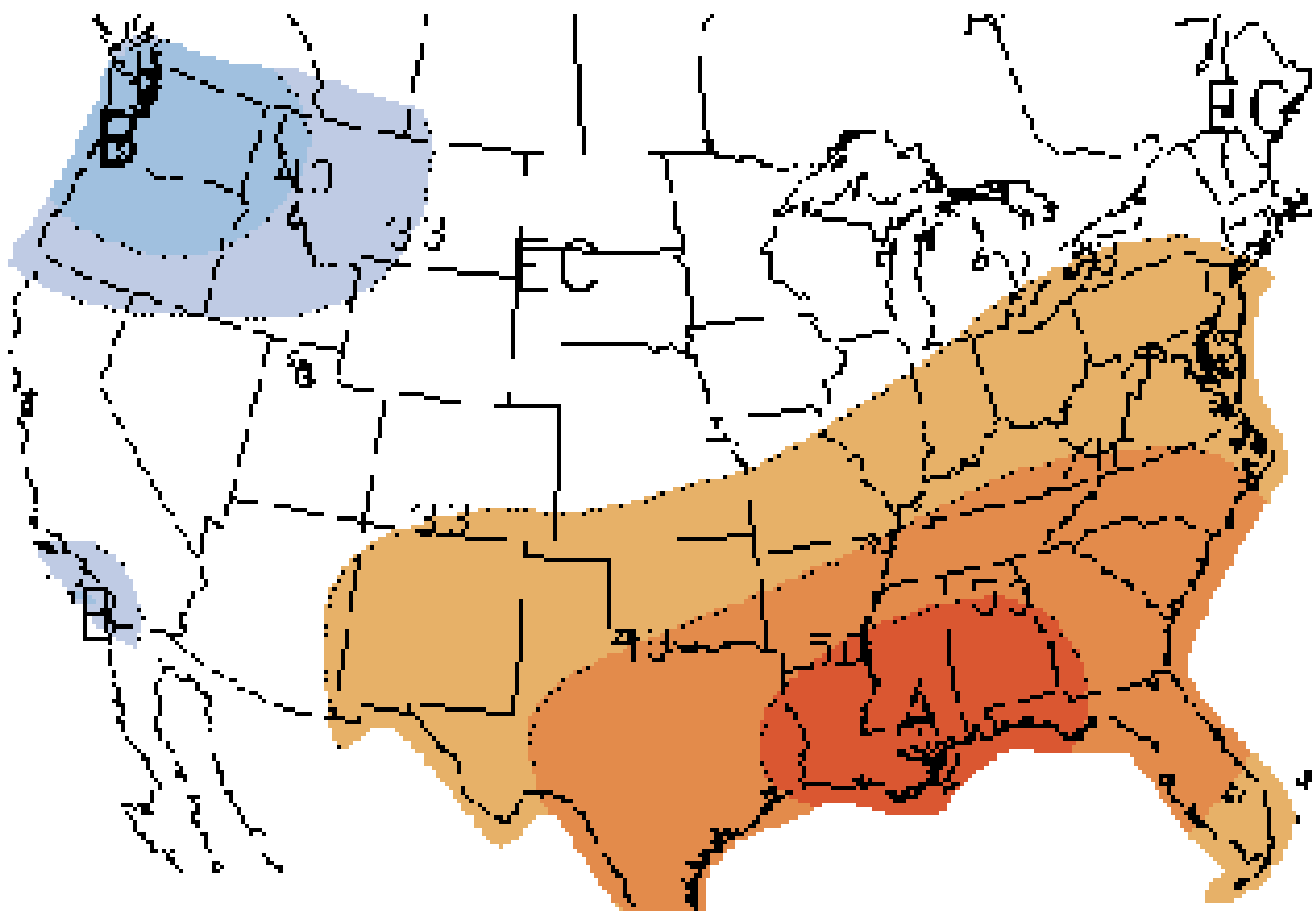
Note: "A" areas are above normal and "B" areas are below normal. Normal is based on the last 30 years of data.

Source: NOAA

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3012

NOAA's Monthly Temperature Forecast Made February 29, Valid for March 2008



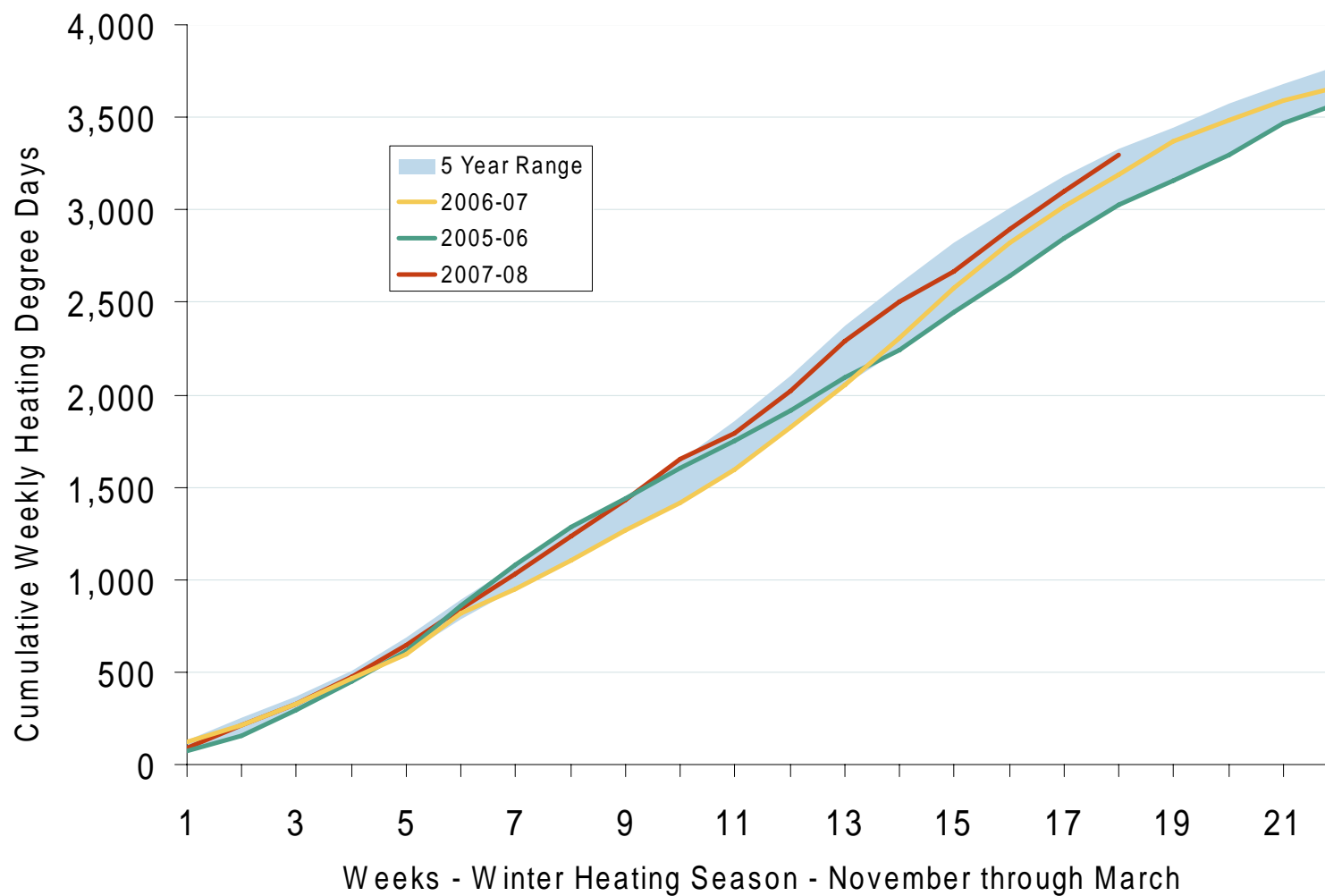
Note: "A" areas are above normal, "B" areas are below normal and "EC" means equal chance. Normal based on the last 30 years of data.

Source: NOAA

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3012

U. S. Winter Cumulative Heating Degree Days

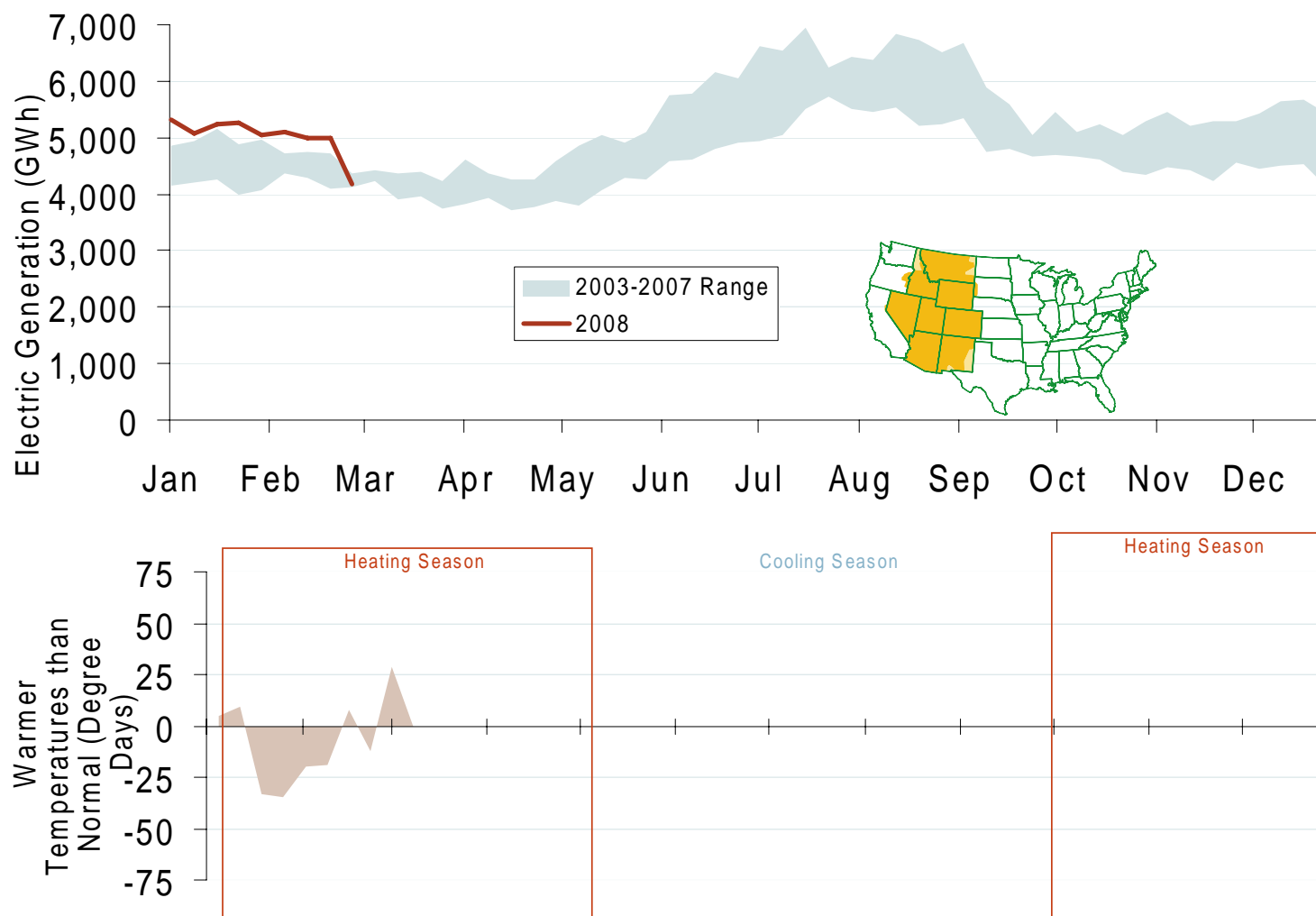


Source: Derived from NOAA data.

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3020

Weekly Electric Generation Output and Temperatures Rocky Mountains Region

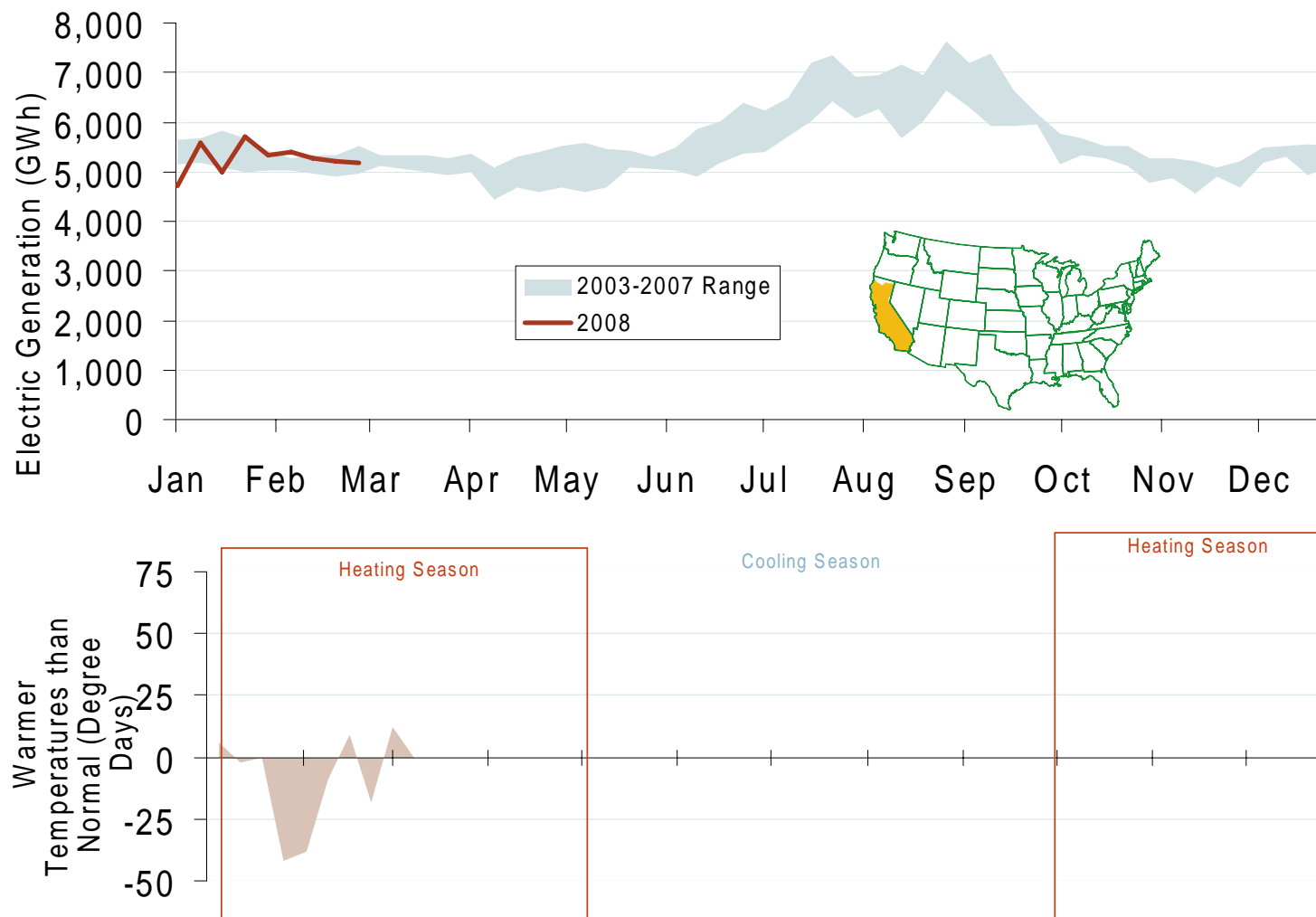


Source: Derived from *EEI* and *NOAA* data.

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1120

Weekly Electric Generation Output and Temperatures California

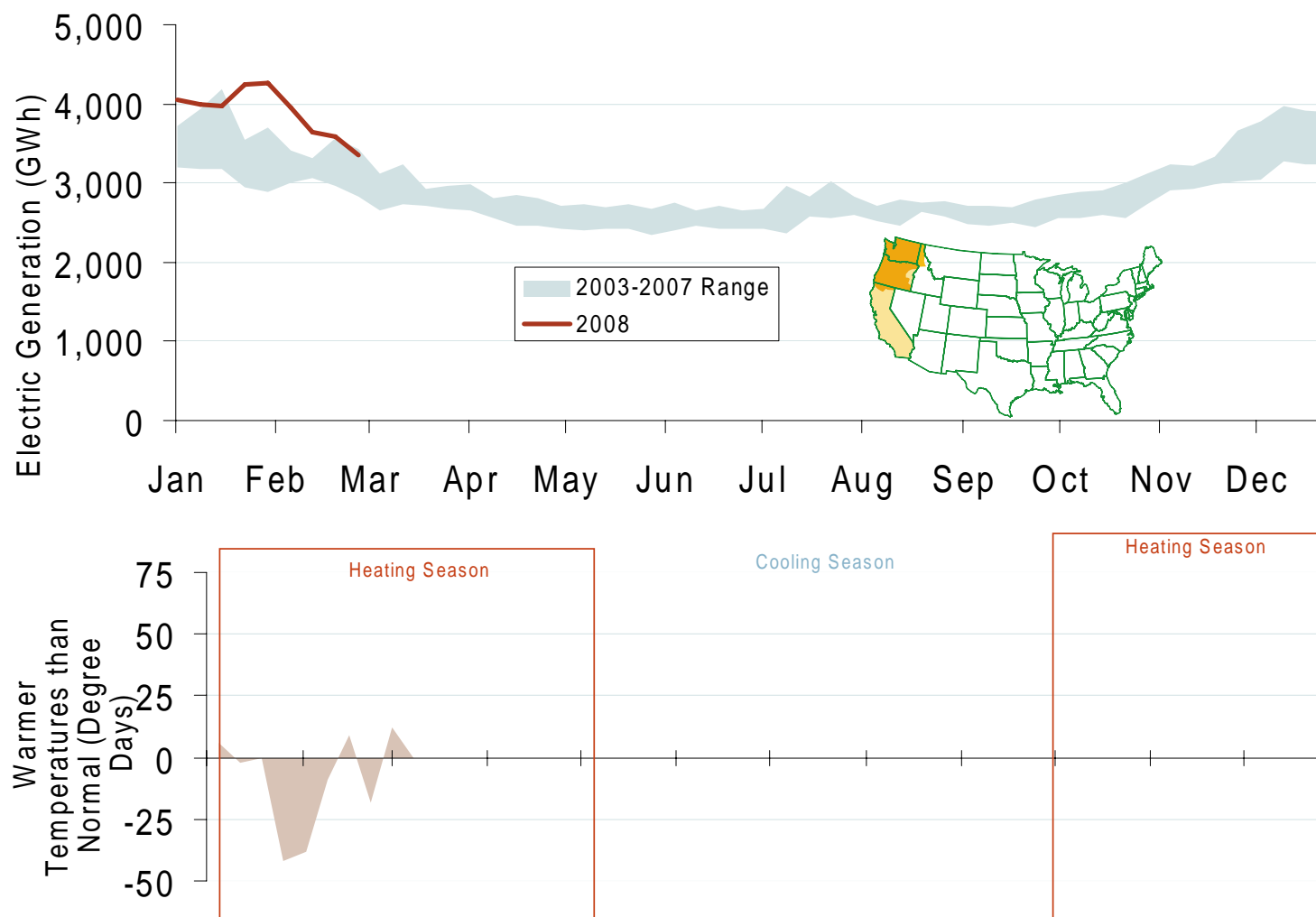


Source: Derived from *EEI* and *NOAA* data.

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1123

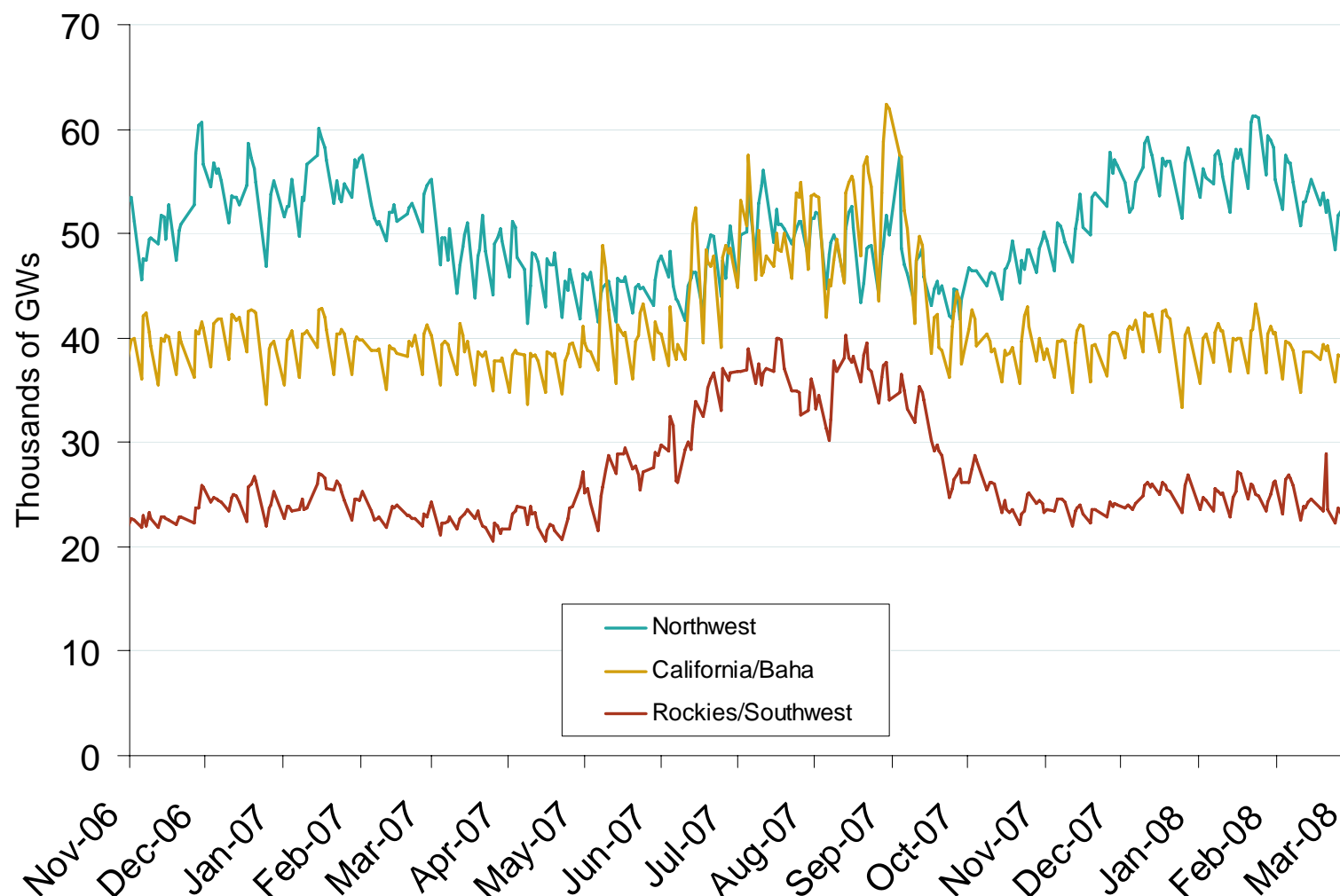
Weekly Electric Generation Output and Temperatures Pacific Northwest Region

Source: Derived from *EEI* and *NOAA* data.

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Western Daily Actual Peak Demand

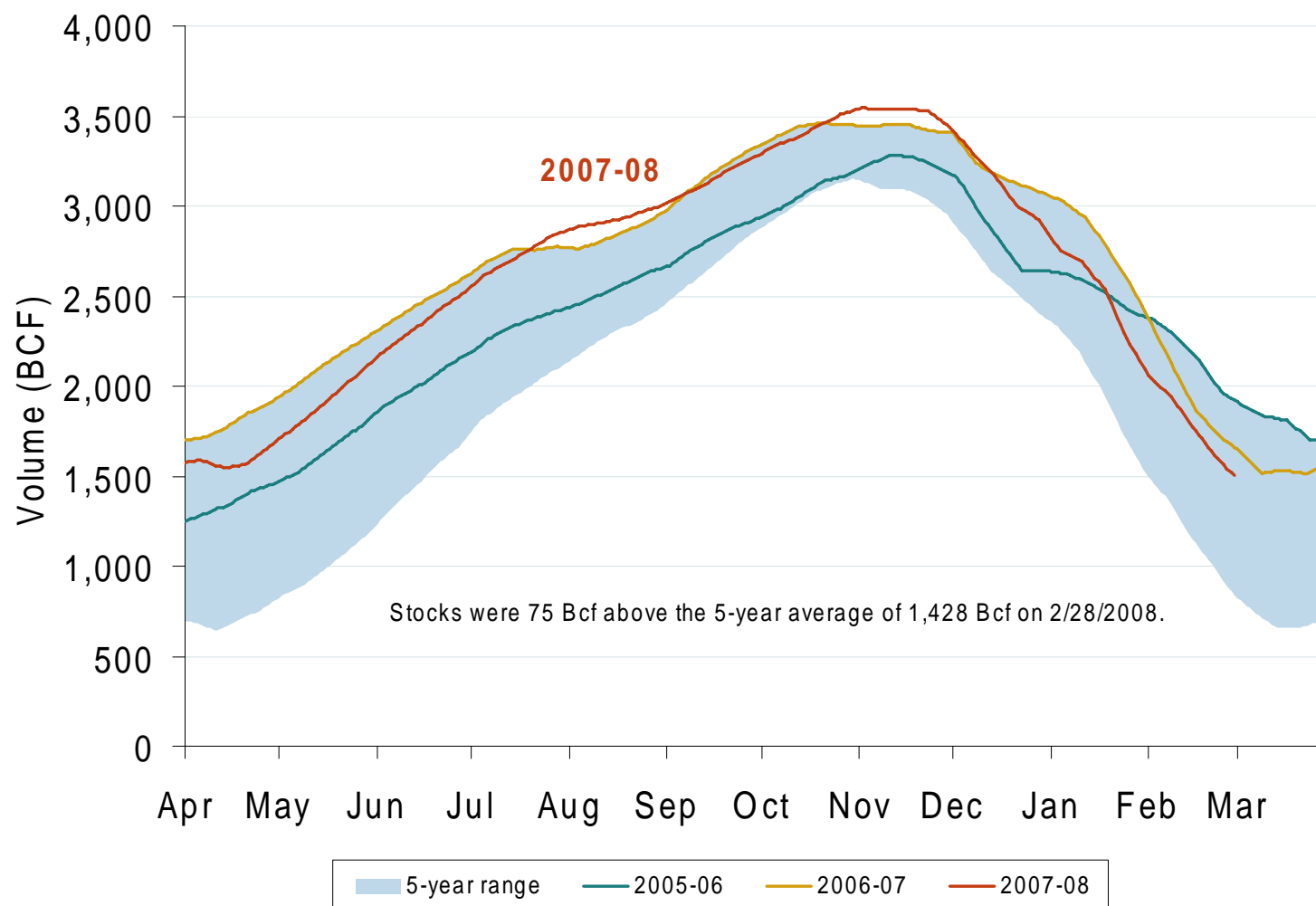


Source: Derived from WECC Daily Report data available at <http://wecc.biz>. Data shown is generally Sunday through Thursday due to limitations of daily reports.

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Total U.S. Working Gas in Storage

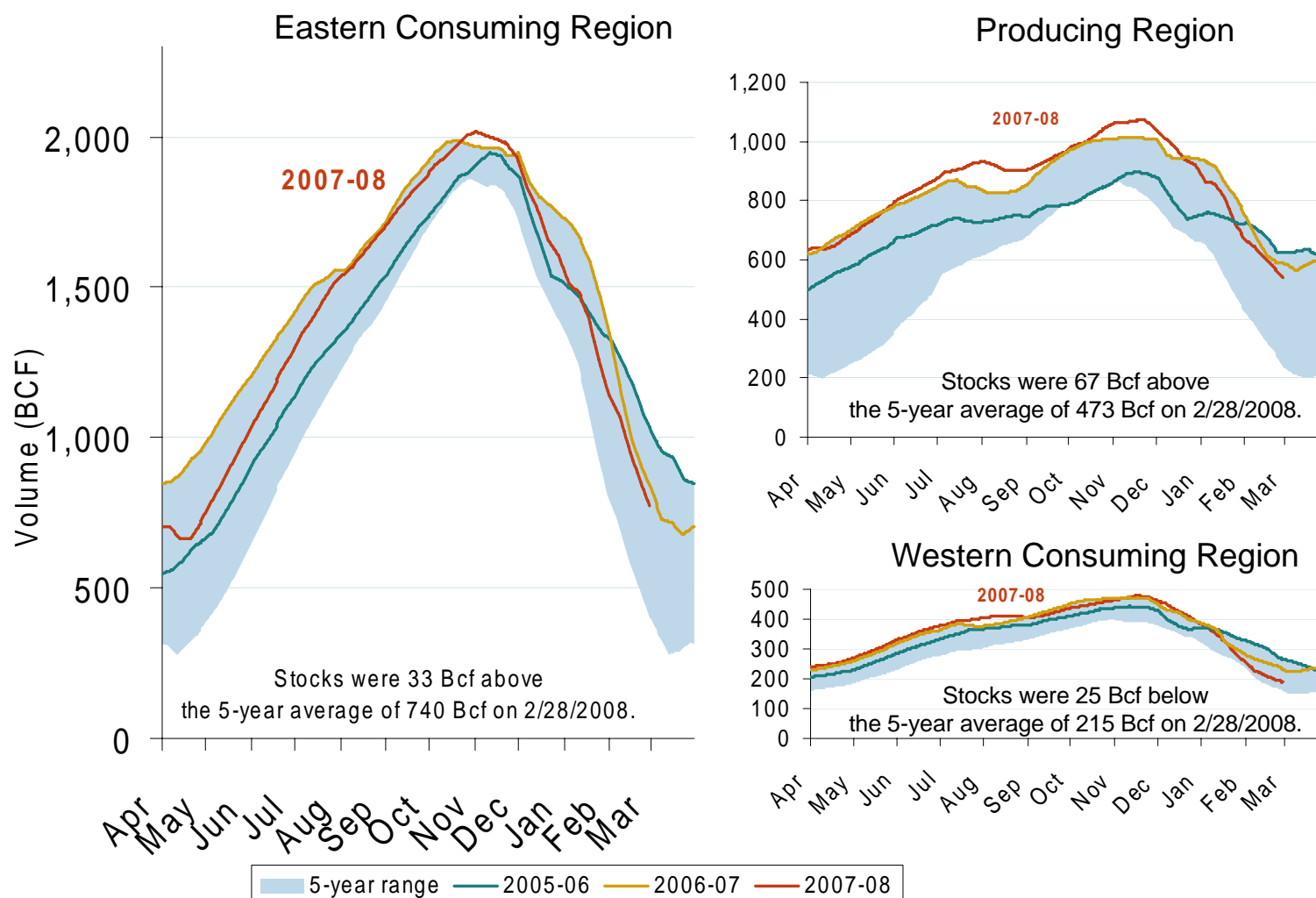


Source: Derived from EIA data.

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2003

Regional Totals of Working Gas in Storage

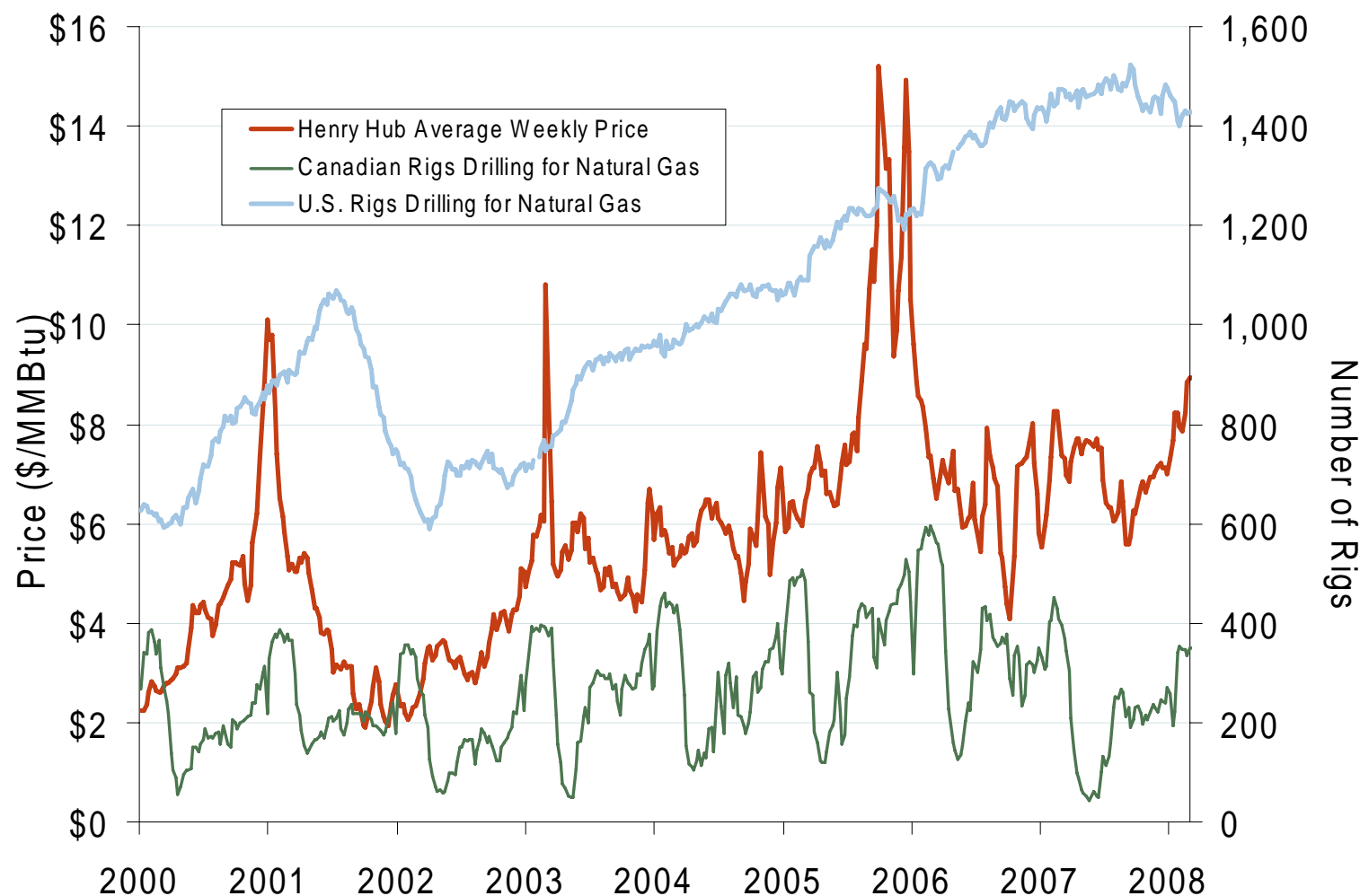


Source: Derived from EIA data.

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2004

U.S. and Canadian Natural Gas Drilling Rig Count and Daily Spot Prices

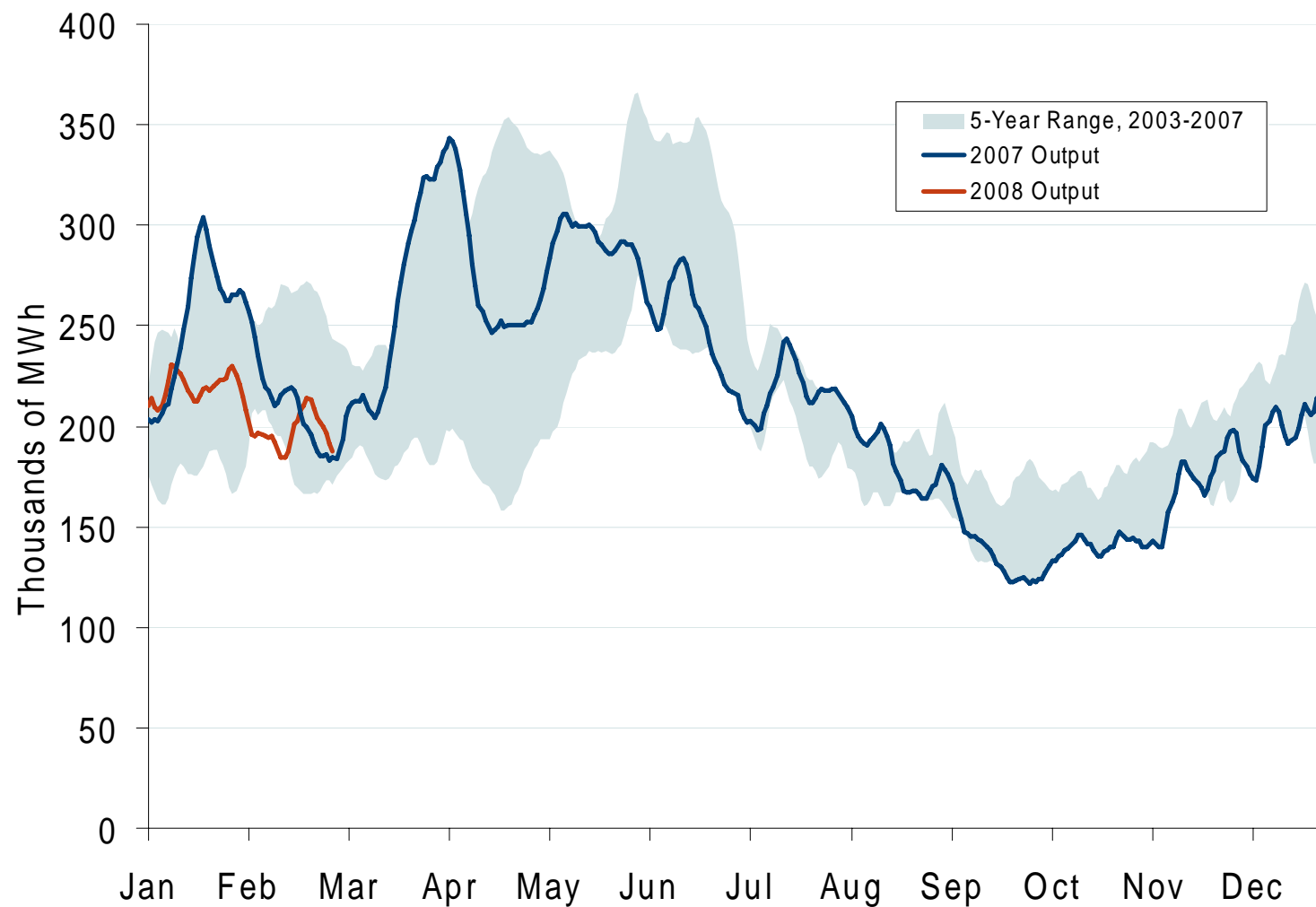


Source: Derived from *Platts* and *Baker Hughes* data.

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2007

Pacific Northwest Hydroelectric Production



Source: Derived from USACE data reflecting the output of the 24 largest facilities.

Trend lines are 7-day moving averages.

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Pacific/Northwest Hydro and Snowpack Levels

	Hydro Generation		Snow Water Equivalent ³		
	In-State Capacity (MW) ¹	Additional Capacity Created Downstream (MW) ²	One Year Ago (% of average)	1/16/08 (% of average)	3/06/08 (% of average)
California	10,400	0	63%	115%	110%
British Columbia	10,000	16,200	127%	104%	108%
Idaho	2,700	19,700	77%	97%	103%
Washington	21,500	0	109%	126%	127%
Montana	2,700	16,200	90%	96%	111%
Oregon	9,100	0	79%	125%	133%

1 Net summer capacity in megawatts by state (EIA).

2 Approximate electric capacity created by water flow through the downstream states (EIA and BPA). The capacity estimates reflect the water flow pattern of the series of hydro facilities on the Snake and Columbia Rivers.

3 Snow Water Equivalent, in percent of the historical average for the same date, is the ratio of current snow water daily data (collected by the Natural Resources Conservation Services' Snowtel Telemetry sites) compared to the average snow water for the same day between 1961-1990. Total Hydro Capacity figures by state do not tie precisely to Snow Water Equivalent data due to such factors as snow basin terrain and complex distribution of run-off to neighboring state hydroelectric dams or shared facilities (e.g., Columbia River hydroelectric dams on the border of Washington and Oregon) (Bloomberg).

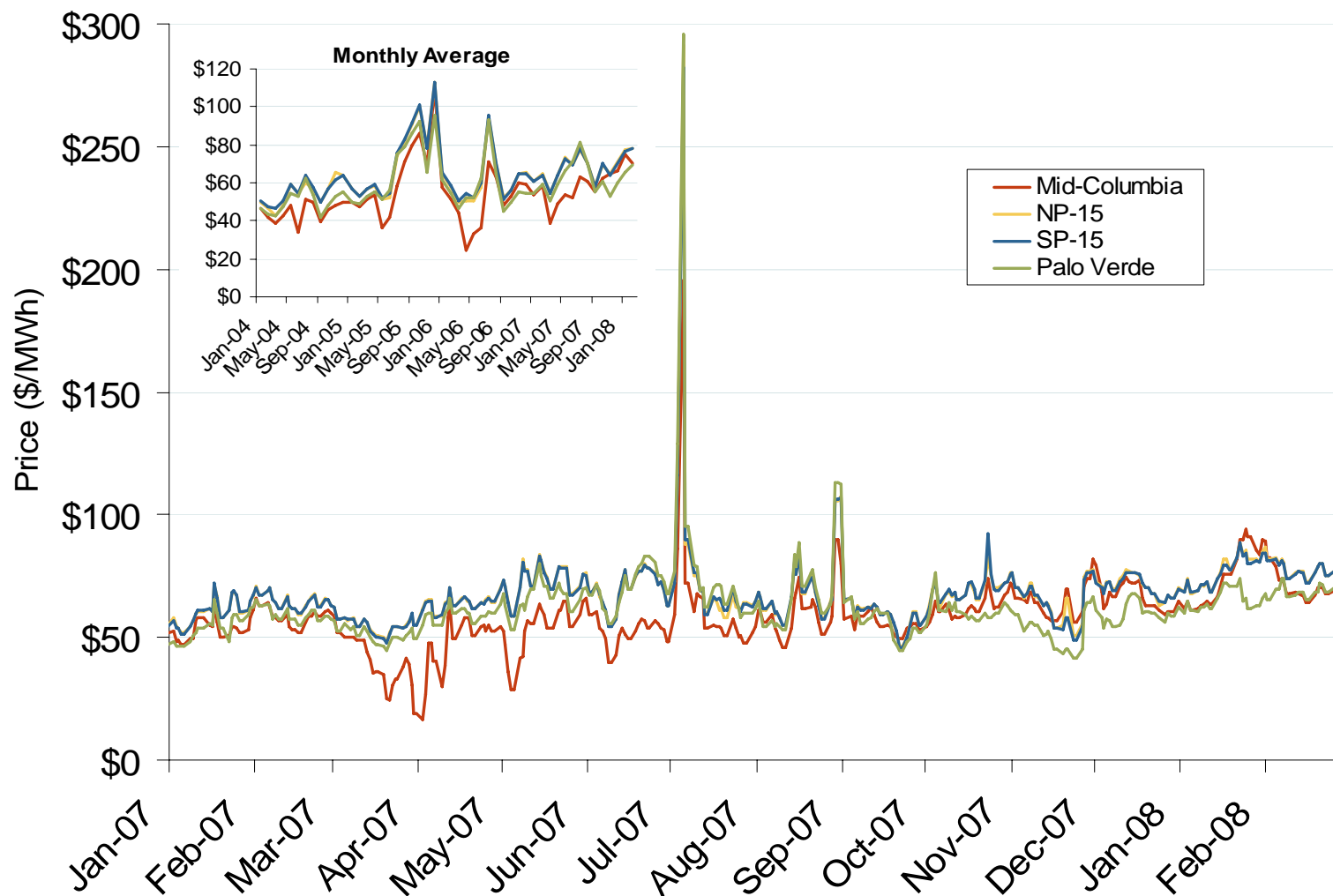
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A decorative graphic consisting of several red lines. A vertical line on the left side is intersected by three horizontal lines, creating a cross-like shape. The lines have a slight blur or motion effect.

Prices and Market Analysis

Western Daily Bilateral Day-Ahead On-Peak Prices

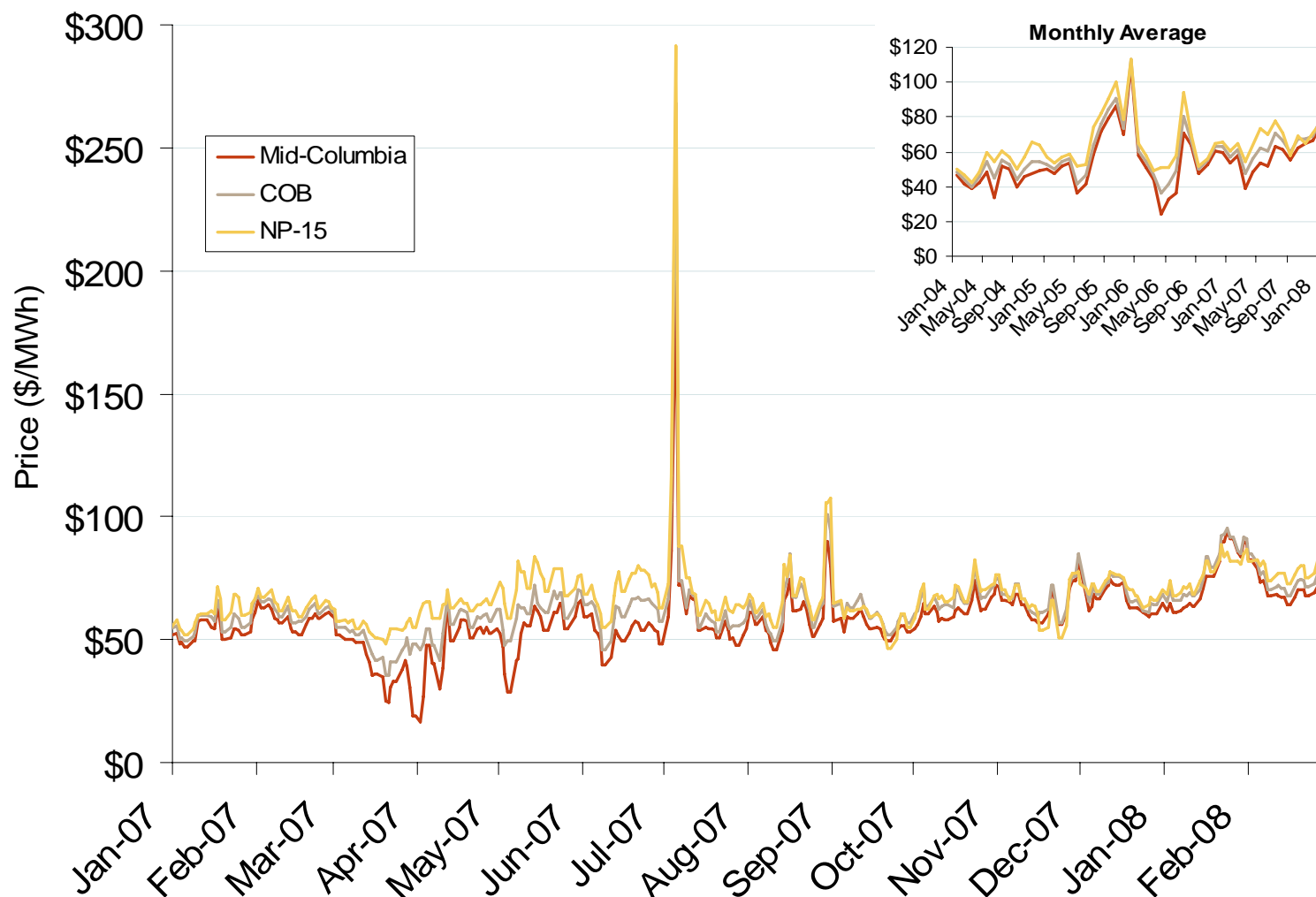


Source: Derived from Platts data.

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1006

Northwestern Daily Bilateral Day-Ahead On-Peak Prices

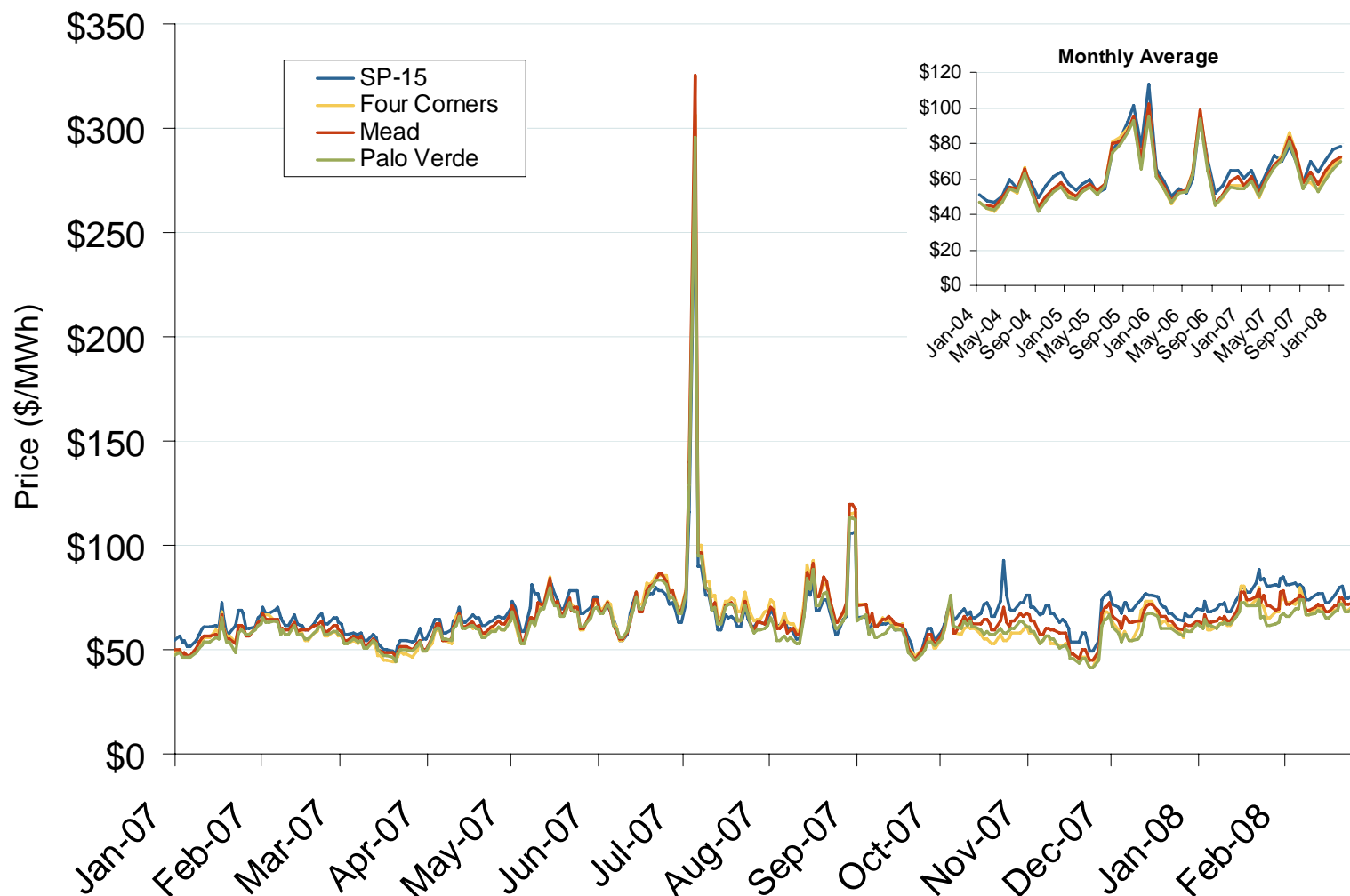


Source: Derived from Platts data.

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Southwestern Daily Bilateral Day-Ahead On-Peak Prices

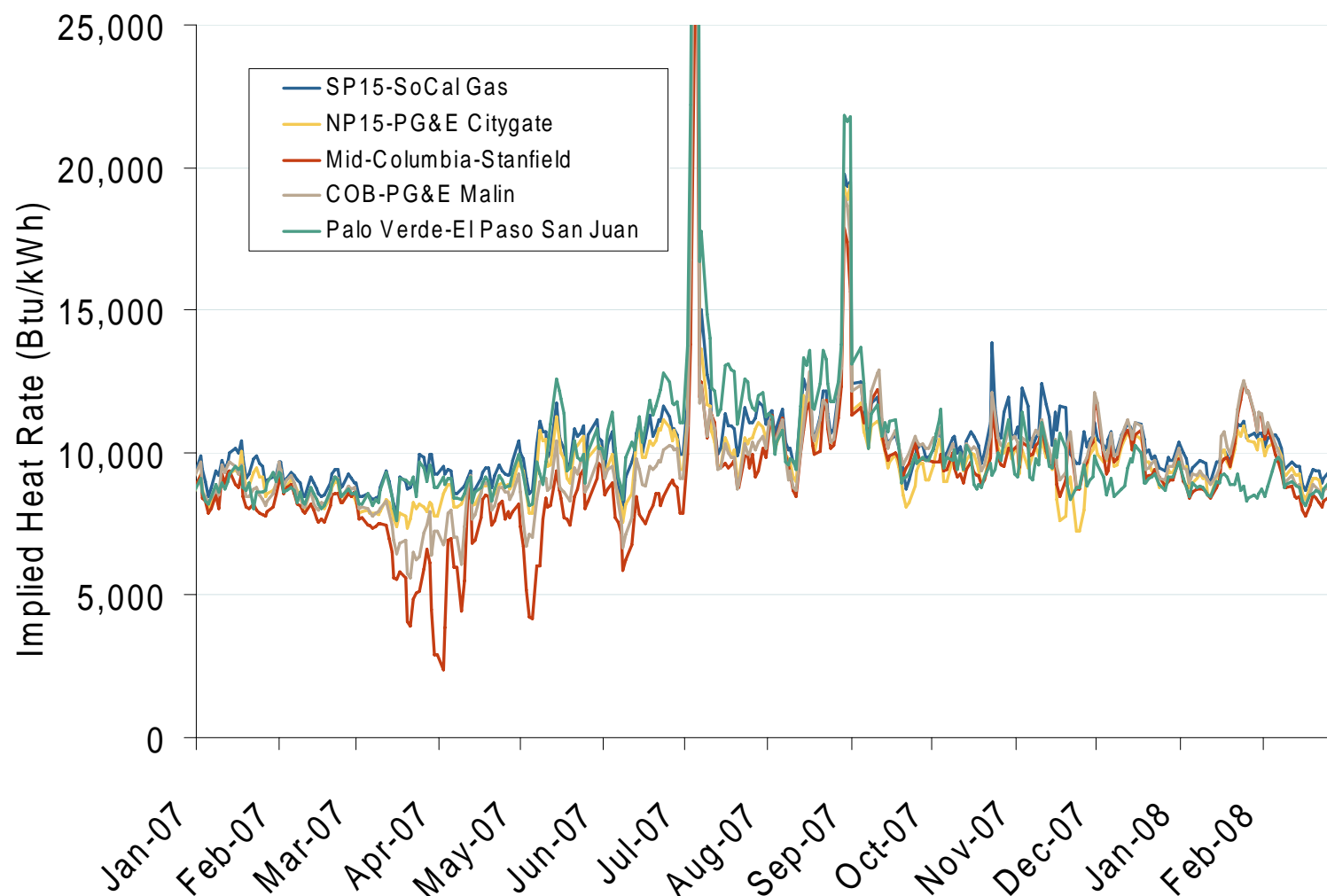


Source: Derived from Platts data.

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1066

Implied Heat Rates at Western Trading Points

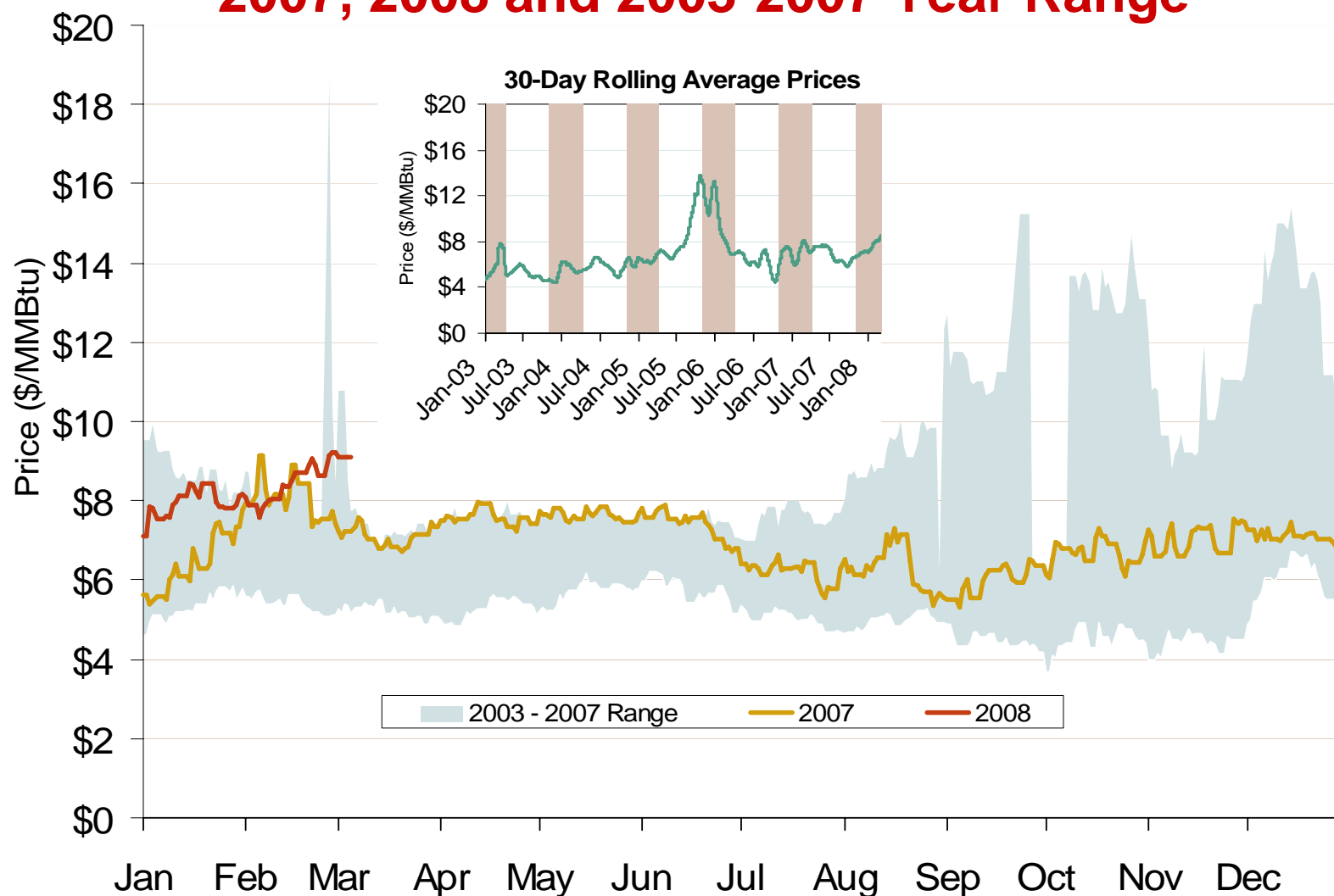


Source: Derived from *Platts* data

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Henry Hub Natural Gas Daily Spot Prices 2007, 2008 and 2003-2007 Year Range

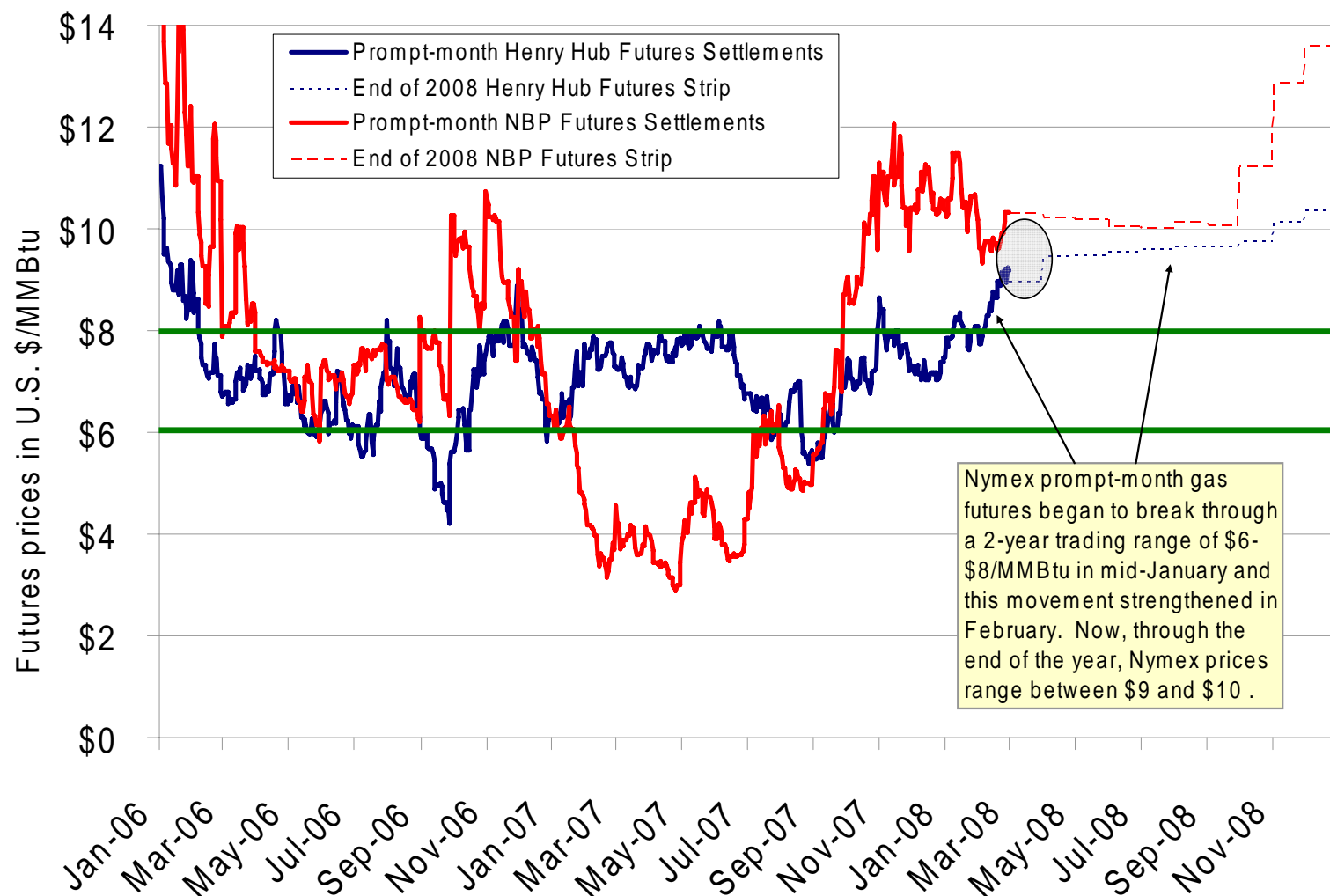


Source: Derived from Platts data.

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U. S. Gas Futures Prices Rise Above \$6-\$8 Range

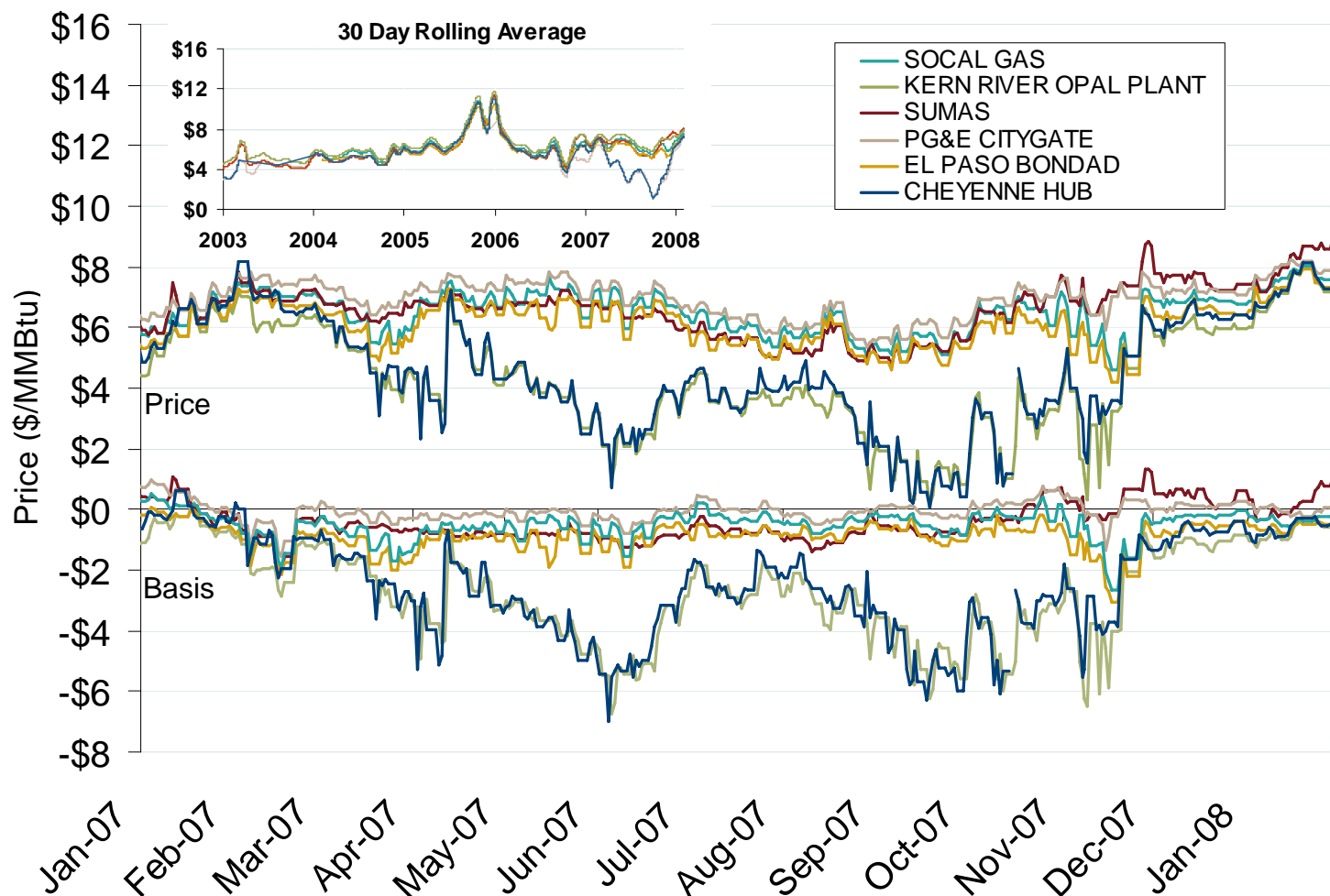


Source: Derived from NYMEX and ICE data.

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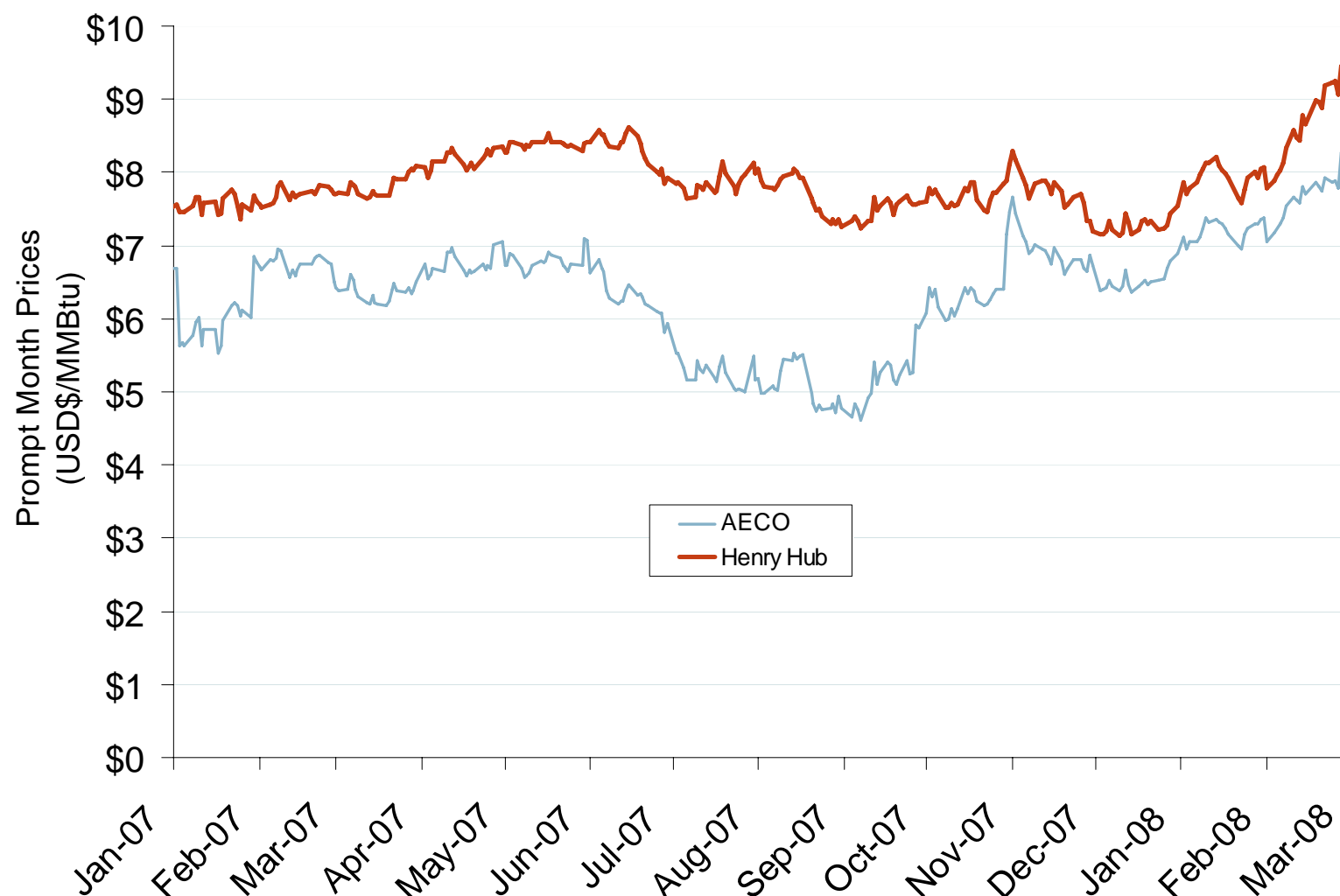
Western Day-Ahead Hub Spot Prices and Basis



Source: Derived from *Platts* data.

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Henry Hub and AECO Prompt-Month Futures Prices

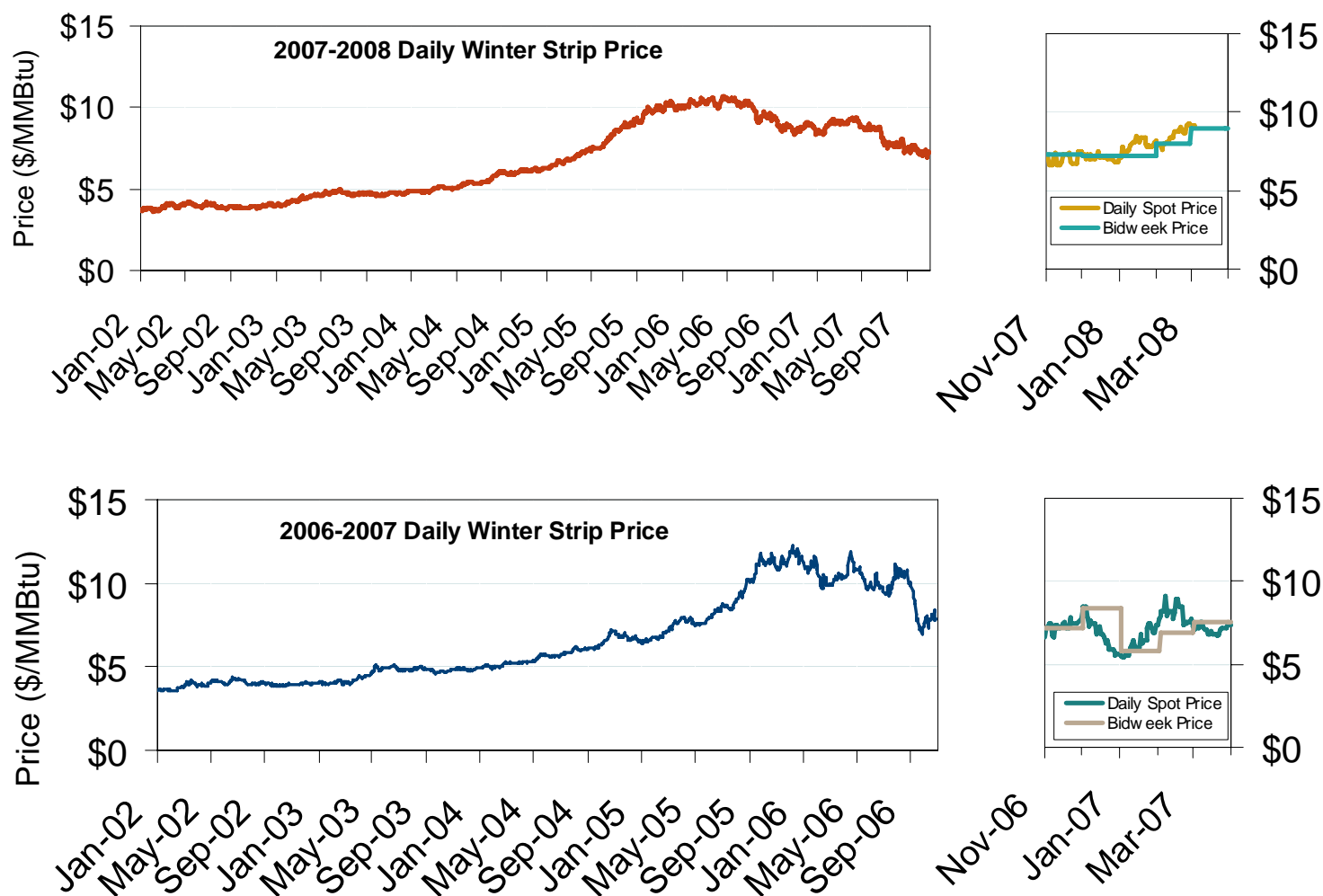


Source: Derived from ICE data.

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Natural Gas Winter Futures Strip and Daily Henry Hub Spot and Bidweek Prices

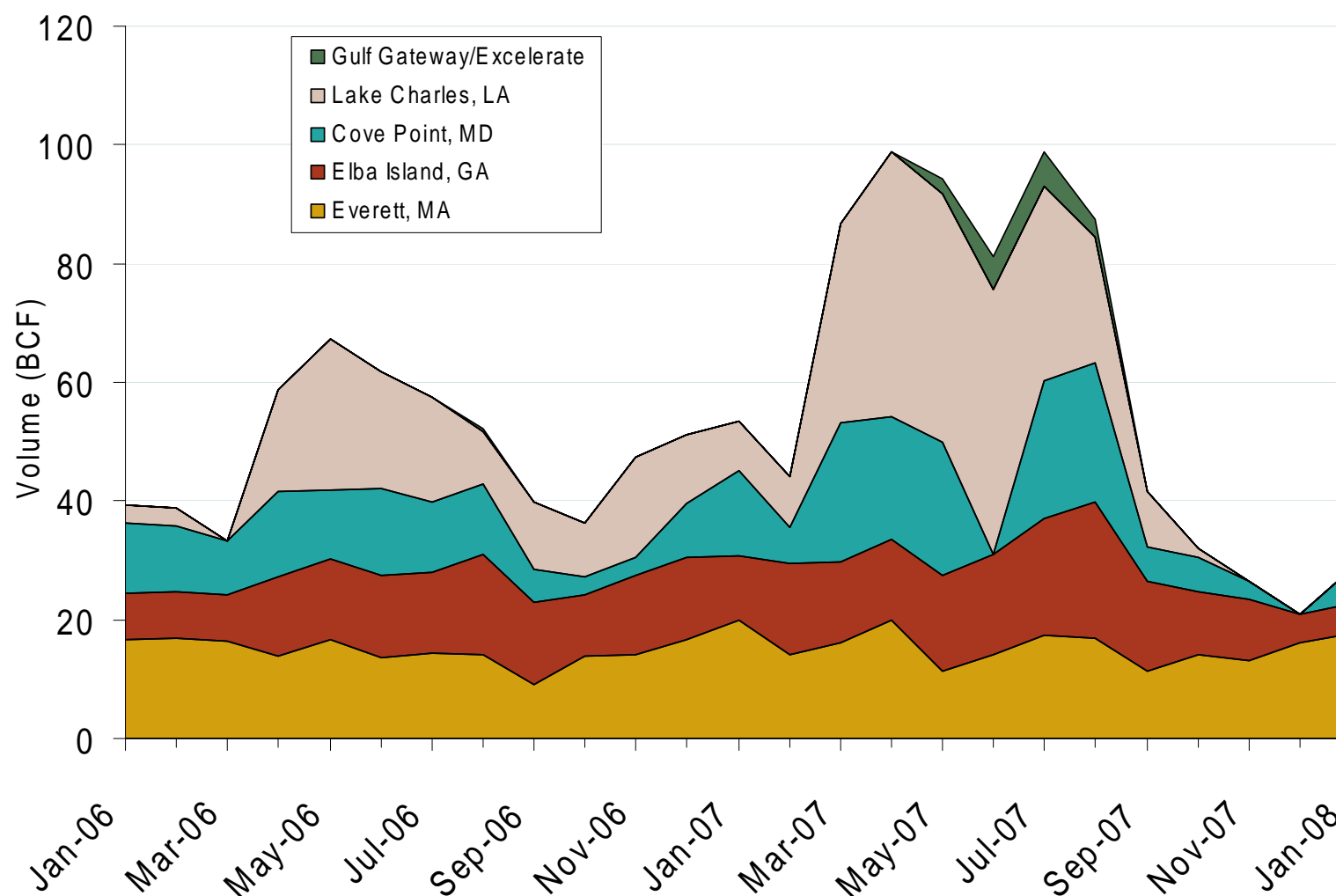


Source: Derived from Platts and Nymex data.

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Monthly Gas Imports at Existing U.S. LNG Facilities

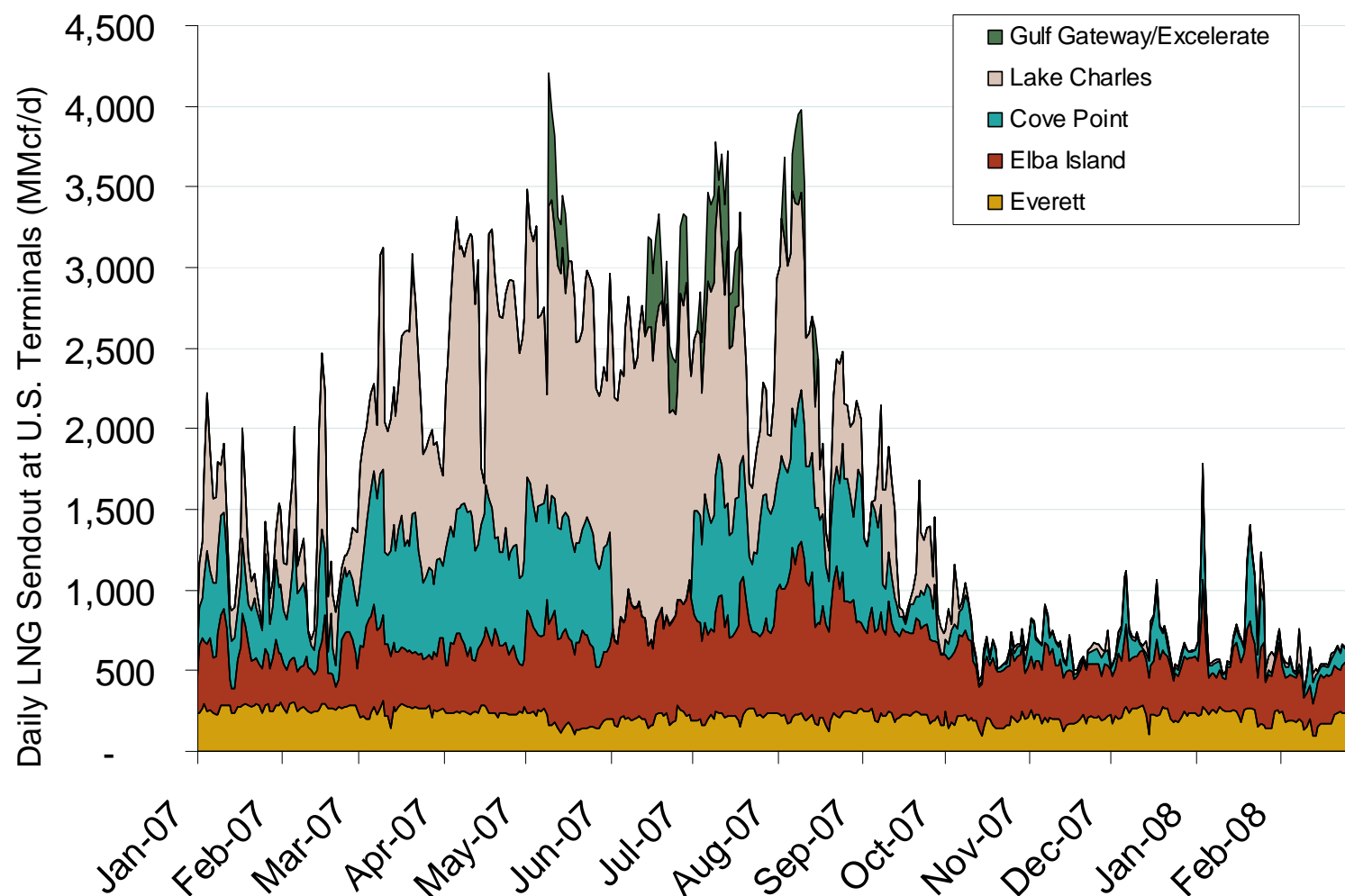


Source: Derived from EIA data.

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Daily Gas Sendout from Existing U.S. LNG Facilities

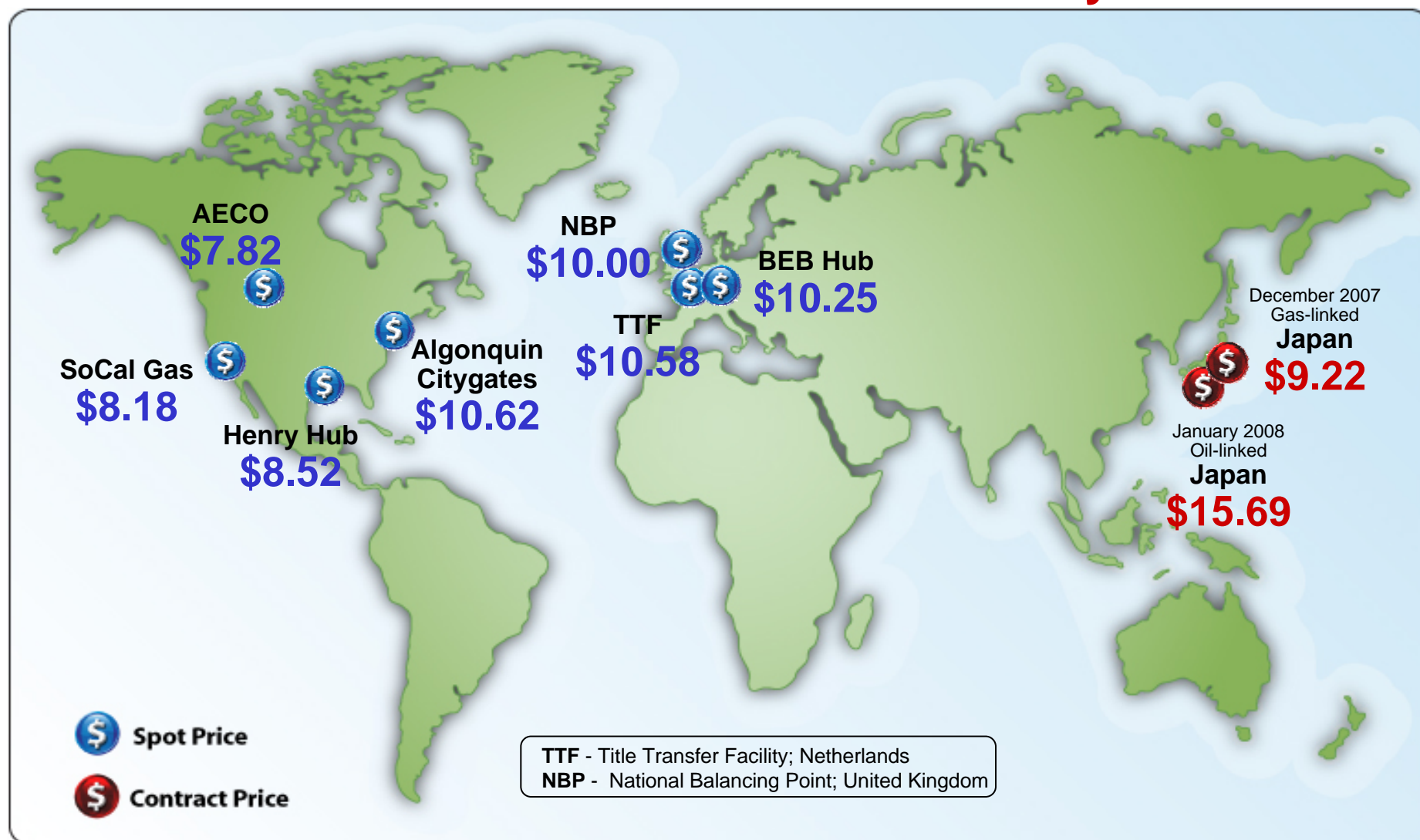


Source: Derived from *Bentek* data. Excludes Everett LNG delivered via truck and consumed by the Mystic plant.

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World Natural Gas Prices for February 2008

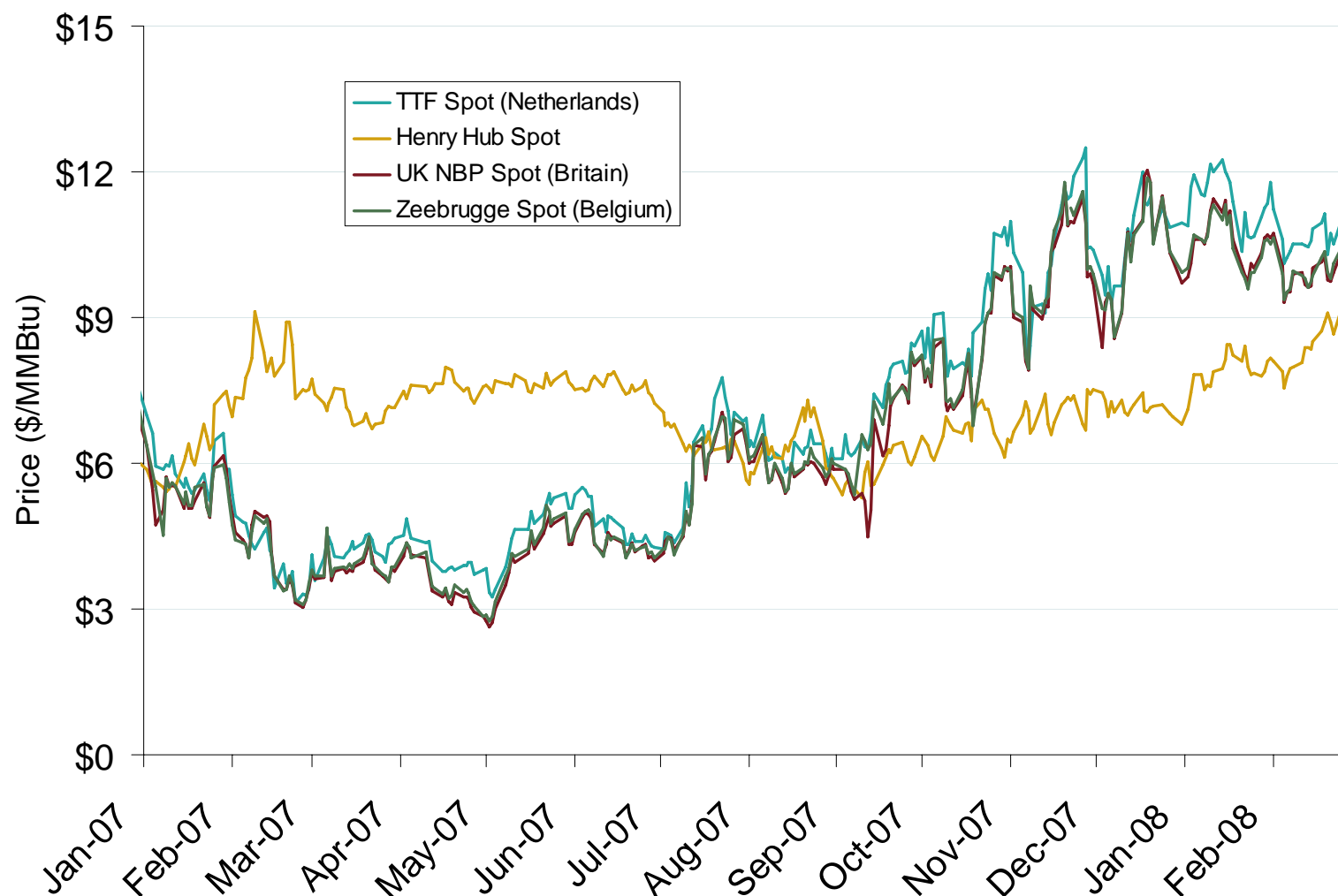


Source: Derived from *Bloomberg, ICE, ICAP and LNG Japan Corp.* data. Spot Price is a monthly average of daily prices. Contract Price is a monthly price. All prices in \$US/MMBtu.

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European and U.S. Spot Natural Gas Prices

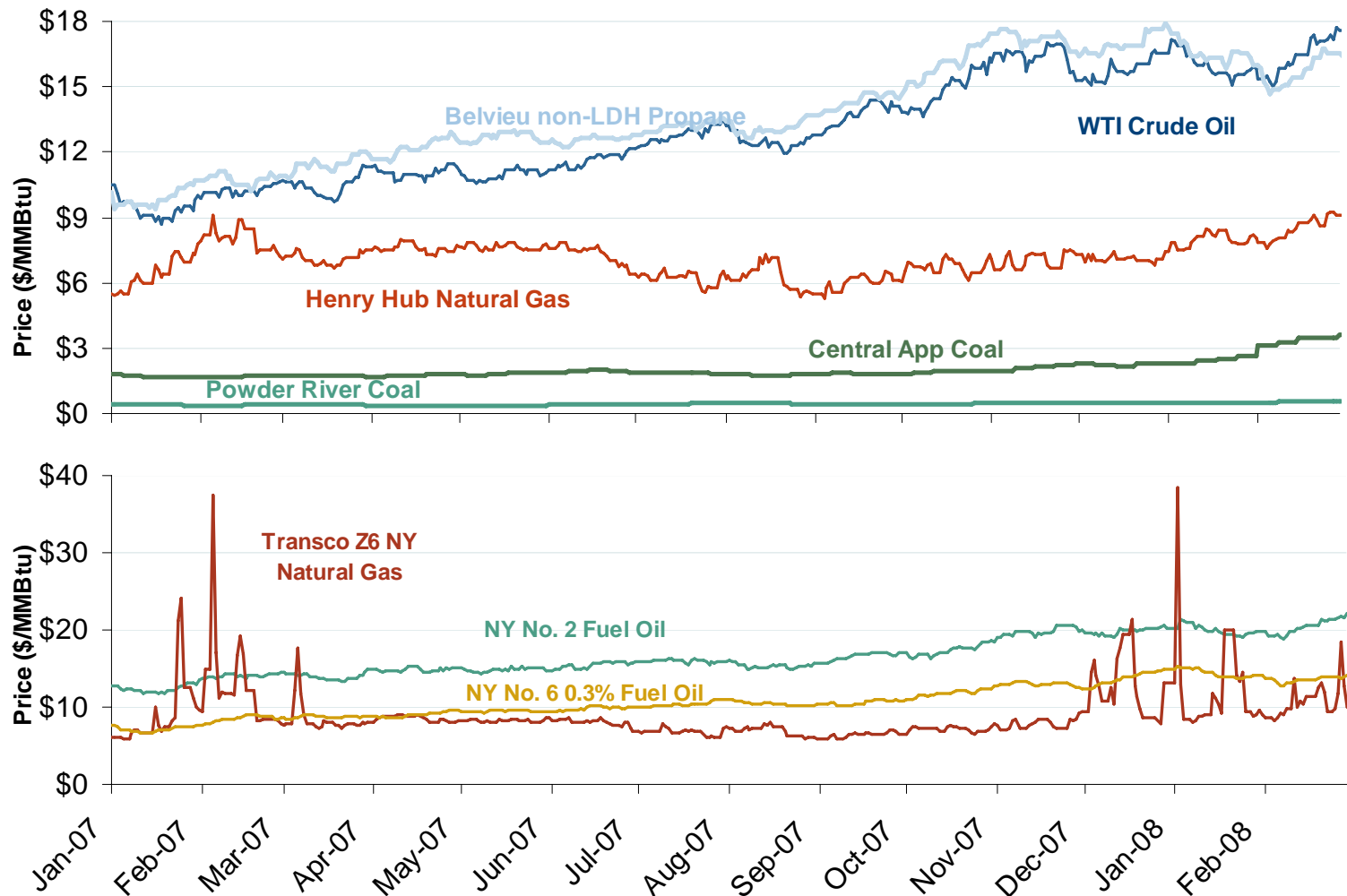


Source: Derived from *Bloomberg* and *ICE* data.

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Oil, Coal, Natural Gas and Propane Daily Spot Prices



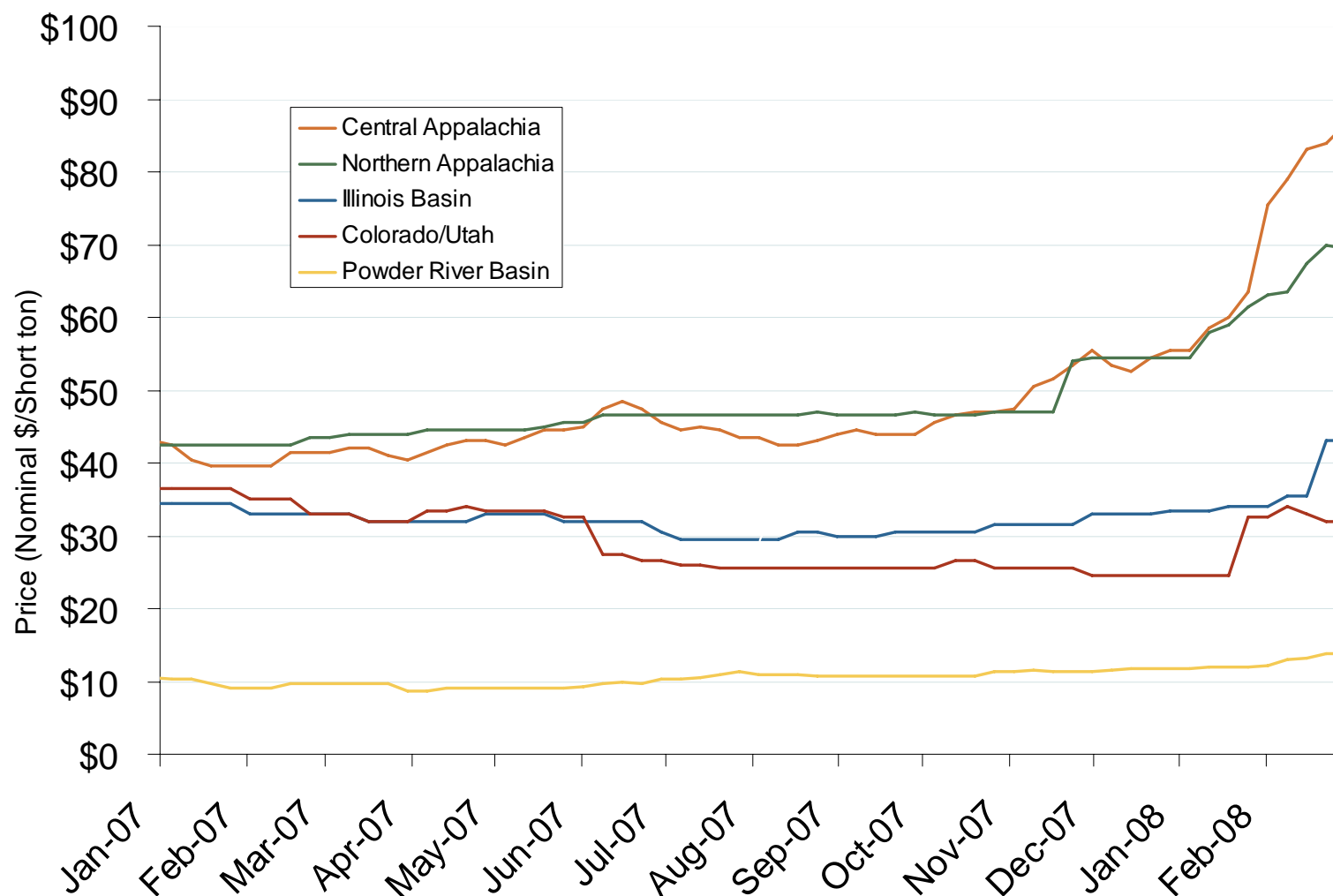
Source: Derived from ICE and Bloomberg data.

Note: Coal prices are quoted in \$/ton. Conversion factors to \$/MMBtu are based on contract specifications of 12,000 btus/pound for Central Appalachian coal and 8800 btus/pound for Powder River Basin coal.

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Regional Coal Spot Prices



Note: Does not reflect the delivered price of coal; excludes incremental cost of emissions allowances.

Source: Derived from *Bloomberg* data.

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Central Appalachian Coal Futures Prices

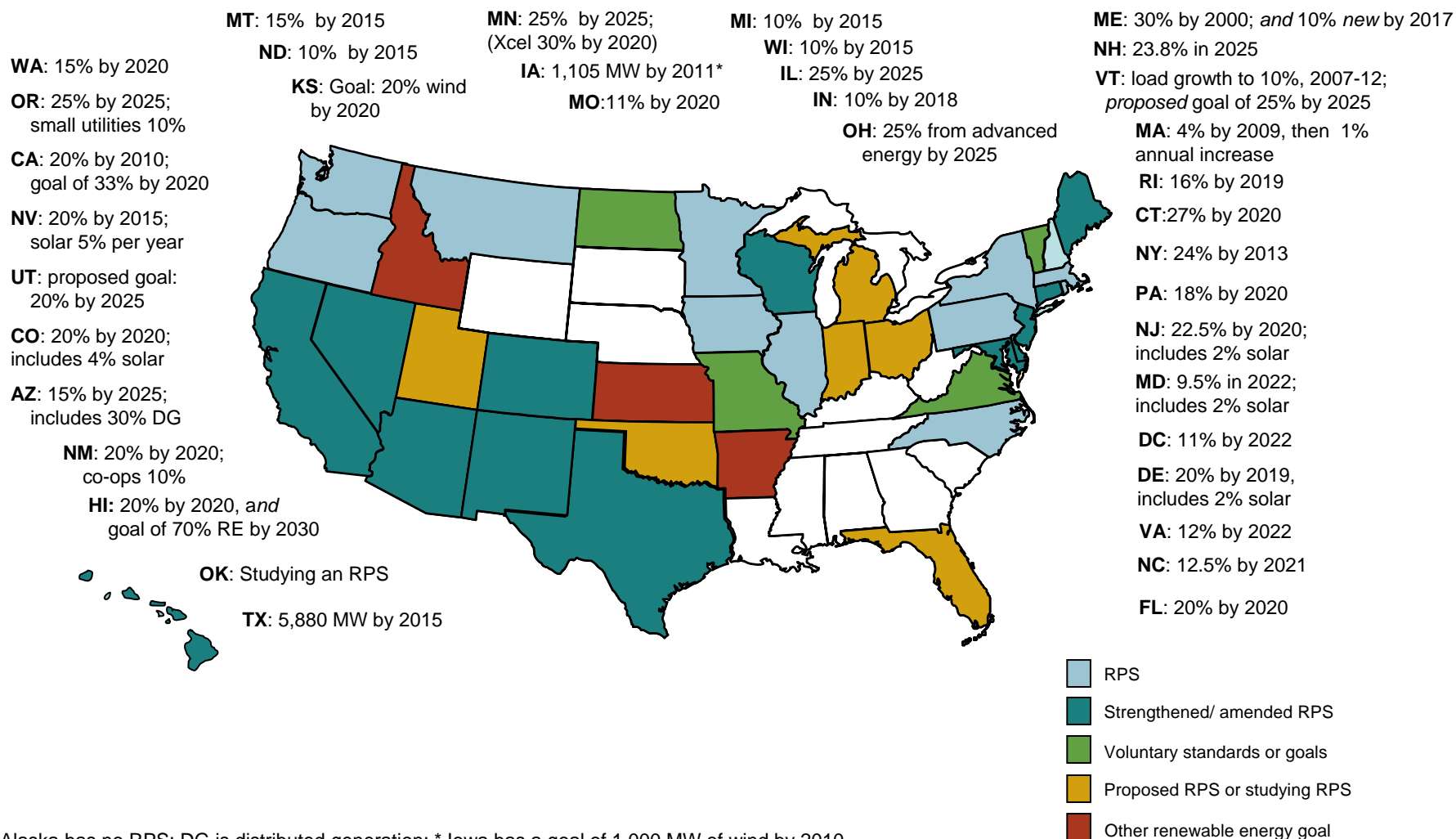


Source: Derived from Nymex data.

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3003

Renewable Energy Portfolio Standards (RPS)



Notes: Alaska has no RPS; DG is distributed generation; * Iowa has a goal of 1,000 MW of wind by 2010

Sources: Derived from data in: EEI, EIA, LBNL, PUCs, State legislative tracking services, Database of State Incentives for Renewables and Efficiency, and the Union of Concerned Scientists.

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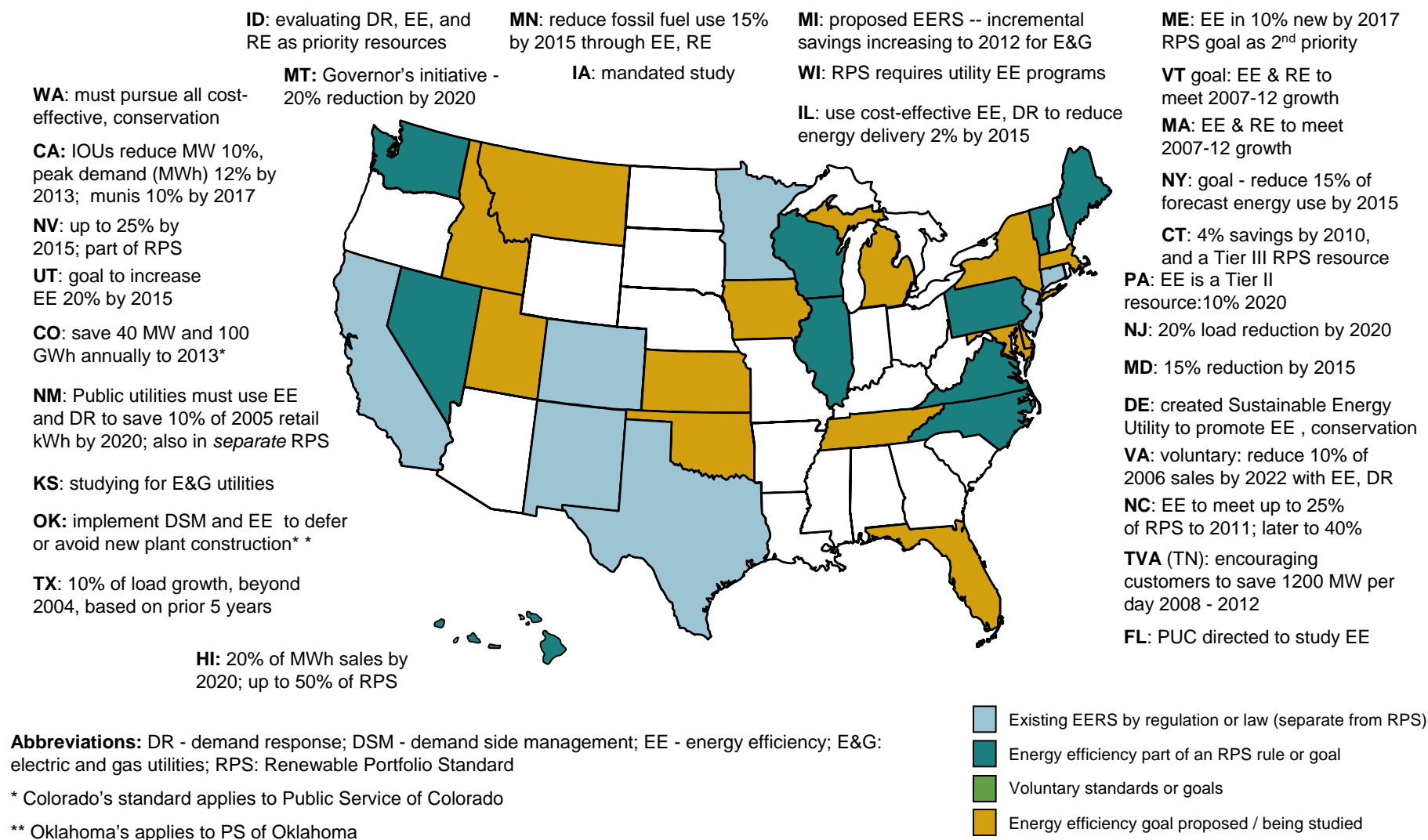
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Renewable Energy Portfolio Standards

- A Renewable Portfolio Standard (RPS) requires a percent of energy sales or installed capacity to come from renewable resources.
- 26 states and D.C. have renewable energy standards.
- Four states have enacted renewable goals without financial penalties.
- 54% of U.S. load is located in states with a renewable energy purchase obligation; an additional 6% is in states with a renewable energy goal.
- Nine states and D.C. have solar set-asides as part of their RPS; five offer extra credit to solar or distributed generation. New Jersey was the first state to create a separate solar credit tracking program (SREC). Maryland adopted a similar program in July 2007 modeled on New Jersey's.
- States revisit earlier RPS goals:
 - Arizona's governor asked the legislature to extend the RPS to cover all utilities.
 - A "green bill" in Massachusetts would increase the use of renewable energy and add energy efficiency.
 - The Maryland Energy Administration called for increasing the RPS and compliance payment; it also called for energy efficiency and advanced metering measures.
 - Iowa added a goal of 1,000 MW of installed wind by 2010, as its utilities long ago met their RPS requirements.
- Eleven states already include energy efficiency in their RPS or renewable goals.
- States which are considering an RPS or other renewable energy goals include:
 - Chambers in Michigan, Ohio and Vermont passed RPS legislation this session which include energy efficiency. Conference committees will try to reconcile details.
 - Indiana re-introduced an RPS from last session; in January, it failed in House Committee. The Senate is considering a separate bill.
 - Kansas' Governor Sibelius set a goal for wind to be 20% of generation by 2020.
 - In January, Oklahoma held a technical conference and issued a notice of inquiry on a possible RPS.
 - Idaho's Draft 2007 Energy Plan included a provision for utilities to give priority to demand response, energy efficiency, and in-state renewable energy over other resources.

Energy Efficiency Resource Standards (EERS)



Sources: ACEEE, EPA, Regulatory Assistance Project, Union of Concerned Scientists, State legislative sites

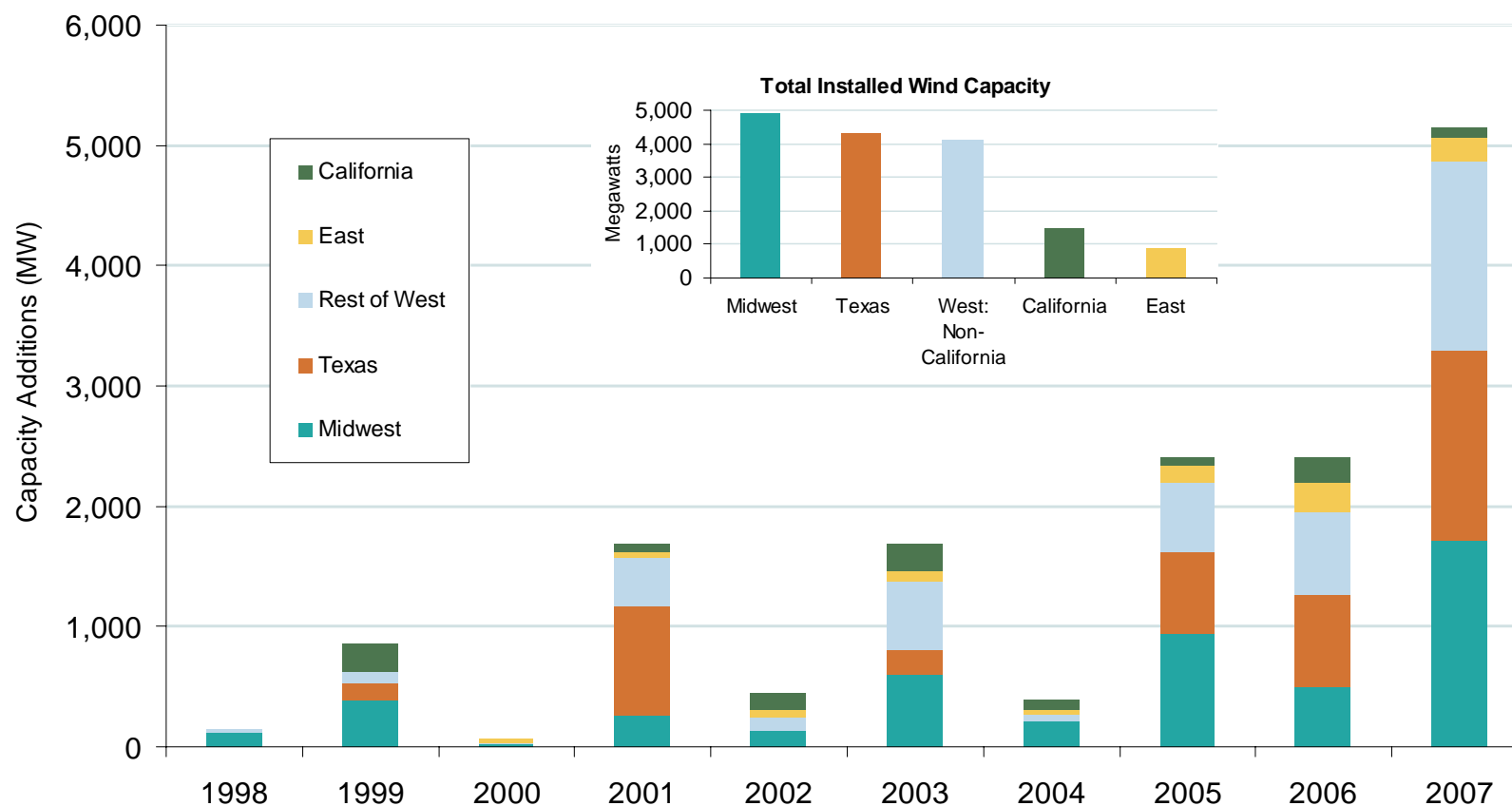
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Energy Efficiency Resource Standards (EERS)

- An energy efficiency resource - or portfolio - standard (EERS) aims to reduce or flatten electric load growth through energy efficiency measures
- Goals may specify reductions in energy (MWh), demand (MW), or both
- 19 states have energy efficiency standards or goals; ten of those include energy efficiency as part of a renewable portfolio standard (RPS) or goal.
 - Five states added an EERS in 2007: Minnesota, Virginia, North Carolina, Connecticut, and Illinois.
 - New Mexico enacted an EERS in February 2008; this is in addition to the energy efficiency already in an RPS.
- States that proposed, are studying, or mandated an EERS design include: Florida, Maryland, Massachusetts, Michigan, Ohio, New Jersey, New York, and Vermont.
- New Mexico's "Utility Customer Load Management" is among the acts which put energy efficiency, conservation, and load management or demand-side resources explicitly on a par with generation resources. They are eligible for cost recovery and form a basis for just and reasonable rates. Many states added performance-based financial incentives as well as cost-recovery.
- Delaware created a "Sustainable Energy Utility" to use a market-based approach to address energy efficiency, conservation, and renewable energy.
- States can encourage participation through public benefit funds or by decoupling utilities' revenues from power sales. Not all use financial penalties for non-compliance.

Growth of U.S. Installed Wind Capacity (MW)



Midwest includes: IL, IA, KS, MI, MN, MS, NE, ND, OH, OK, SD, WI

East includes: ME, MA, NH, NJ, NY, PA, RI, TN, VT, WV

Source: American Wind Energy Association (AWEA)

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2007 Review of Wind Generation

- Installed wind capacity grew 5,244 MW from 11,603 MW in 2006 to 16,818 MW in 2007, a 45% increase.
- More new wind capacity was added in 2007 than any prior year.
- Just over half of new capacity – 2,704 MW – was installed in states with the highest wind potential. 59 percent of that – 1,588 MW – was in Texas.
- Installed capacity grew 150% from 2004 to 2007, while:
 - the number of states (including D.C.) with a renewable portfolio standard grew from 21 to 27, and
 - the wind production tax credit did not lapse.
- The top five states by capacity added in 2007 were: Texas (1,618 MW), Colorado (776), Illinois (592), Oregon (447), and Minnesota (405). Texas moved into 1st place in installed wind capacity in 2006, passing long-time leader California.
- The top 10 states by cumulative installed capacity have 14,366 MW of wind, or 85% of U.S. capacity. Nine of them had a Renewable Portfolio Standard (RPS) in 2007.
- The rapid growth of wind generating capacity has led to a backlog in many interconnection queues. The Commission held a Technical Conference on December 11, 2007 (AD08-2-000) to re-examine the Large Generator Interconnection Rule. Many ISO/RTOs reported that the queuing procedures specified by Order 2003 impede the timely interconnection of wind resources.